STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

January 29, 2018

The Honorable Charles P. Perotti
First Selectman
Town of North Canaan
Town Hall
100 Pease Street #3
North Canaan, CT 06018

RE: **EM-SPRINT-100-180126** – Sprint notice of intent to modify an existing telecommunications facility located at 36 Lower Road, North Canaan, Connecticut.

Dear First Selectman Perroti:

Pursuant to the Regulations of Connecticut State Agencies Section 16-50j-72, the Connecticut Siting Council (Council) is in receipt of a request to modify an existing telecommunications facility located in the Town of North Canaan.

In accordance with Section 16-50j-73 of the Regulations of Connecticut State Agencies, on January 26, 2018, written notice of the intent to modify the existing telecommunications facility was provided to the Council, the property owner of record and the chief elected official of the municipality in which the existing telecommunications facility is located.

Should you have any questions or comments regarding the above-referenced request, please feel free to call me at 860-827-2951 or submit written comments to the Council by February 12, 2018.

Thank you for your consideration.

Sincerely,

Melanie Bachman
Executive Director

MB/FOC/bm

c: Ruth Mulcahy, Zoning Enforcement Officer, Town of North Canaan
Steve Allyn, Planning and Zoning Chairman, Town of North Canaan

Cherundolo Consulting

1280 Route 46 West, Suite 9, Parsippany NJ, 07054

Melanie Bachman
Executive Director
CT Siting Council
10 Franklin Square
New Britain, CT 06051

EM-SPRINT-100-180126

Re: Notice of Exempt Modification Application
39 Lower Rd, North Canaan, CT

Latitude: N42.01605
Longitude: W72.3268

ORIGINAL

RECEIVED
JAN 26 2018
Connecticut Siting Council

Dear Ms. Bachman:

Sprint currently maintains 3 existing panel antennas and 6 remote radio units at the 154' centerline level of the existing lattice tower. Sprint proposes to add 3 panel antennas and 6 remote radio unit at 154' centerline on the tower. Sprint further proposes to add 3 hybrid cables and 33 Antenna to RRH jumper cables and 12 R.E.T cables. Sprint is performing a new high-performance upgrade for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Please accept this letter as notification to the Council, pursuant to R.C.S.A. Section 16-50j-73, for construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter is being sent to Charles P. Perotti First Selectman for the Town of North Canaan as well as Ruth Mulcahy, Zoning Enforcement Officer for the Town of North Canaan and Litchfield County Dispatch, owner of the property.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in Sprint's operations at the site. Also included is documentation of the structural sufficiency of the tower with proposed modifications to accommodate the revised antenna configuration, the original permit and the last CSC approval as well as the tax card.

Existing Facility

CSC Summary Statement – CT33XC025 – 39 Lower Rd,
North Canaan CT 06018

The Litchfield County Dispatch facility is located at 39 Lower Rd, North Canaan, CT and is owned by Litchfield County Dispatch, the Site coordinates are: N42.01605, W72.3268

The existing facility consists of a 195' Self Support Lattice Tower. Sprint currently operates wireless communications equipment on a platform on a concrete slab at the facility and has 3 antennas and 6 RRU's mounted on at a centerline of 154' feet.

Statutory Considerations

The planned modifications to the facility fall within the activities explicitly provided for in R.C.S.A. 16-50j-72(b)(2)

1. The height of the overall structure will be unaffected.

2. The proposed changes will not require an extension of the property boundaries.

3. The proposed additions will not increase the noise level at the existing facility by

six decibels or more, or to levels that exceed state and/or local criteria

4. The changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, Sprint respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A Section §16-50j-72(b)(2).

Respectfully submitted,

Ryan G Bailey
Charles Cherundolo Consulting
856-625-1596
ryan@mackenzierealtyconsulting.com

Additional Recipients:
Charles P. Perotti First Selectman for the Town of North Canaan – Via FedEx
Ruth Mulcahy, Zoning Enforcement Officer for the Town of North Canaan - Via FedEx
Litchfield County Dispatch, owner of the property – Via FedEx

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

December 2, 2011

Mark Hulshart, Principal
Hulshart & Associates, LLC
3009 Federal Hill Drive
Falls Church, VA 22044

RE: **EM-SPRINT-100-111114** – Sprint Spectrum LP notice of intent to modify an existing telecommunications facility located at 38 Lower Road, North Canaan, Connecticut.

Dear Mr. Hulshart:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated November 3, 2011. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Linda Roberts

Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Douglas E. Humes, Jr., First Selectman, Town of North Canaan
Martin McKay, Planning and Zoning Chairman, Town of North Canaan
Litchfield County Dispatch

APPLICATION FOR BUILDING PERMIT

(APPLICATION MUST BE TYPED OR PRINTED)

TOWN OF NORTH CANAAN PERMIT NO. #4133

LOCATION

39 LOWER RD.
NO. STREET
NORTH CANAAN CT 06018
TOWN STATE ZIP

FEE SCHEDULE

FEE $25 VALUE OF CONSTRUCTION FOR 1ST $1000 (MINIMUM FEE).
$ 6 FOR EACH ADDITIONAL $1000 OR PART THEREOF.
BUILDING OFFICIAL MAY DEMAND AFFIDAVIT OF ACTUAL VALUE.

TYPE OF CONSTRUCTION

☐ ORIGINAL CONST. ☐ REPAIR
☐ ALTERATION ☐ DEMOLITION
☒ ADDITION ☐ CHANGE OF USE

OWNER

LITCHFIELD COUNTY DISPATCH
NAME
111 WATER ST.
NO. STREET
TORRINGTON CT 06790
TOWN STATE ZIP

VALUE / FEE

	VALUE	$ FEE
ESTIMATED	14,000	103.00
ACTUAL		
DIFFERENCE		
ADDITIONAL FEE		

REQUIREMENTS

☐ BLUEPRINTS ☐ TOWN ZONING
☐ SANITATION APPLIC. ☐ PLOT PLAN
☐ OTHER

APPLICANT

SPRINT C/O BLACK + VEATCH
NAME
30150 TELEGRAPH RD STE 355
NO. STREET
BINGHAM FARMS MI 48025
TOWN STATE ZIP

DEPARTMENT DECISION

APPLICATION IS HEREBY
☒ APPROVED ☐ DISAPPROVED
12/8/11 [signature] BUILDING OFFICIAL
DATE

BUILDING TYPE

☐ RESIDENTIAL ☒ COMMERCIAL
☐ _____ OTHER

BUILDING

CONTRACTOR INFORMATION

OVERLAND CONTRACTING, INC
NAME
587 SIGMAN RD. NE STE 100
NO. STREET
CONYERS GA 30013
TOWN STATE ZIP

MCO 090493
CONTRACTOR LICENSE - REGISTRATION NUMBER
6/30/12 EXPIRATION DATE
314 210 8629 CONTRACTOR TELEPHONE
CONTRACTOR SIGNATURE

PERMITS ARE REQUIRED BEFORE STARTING WORK. EXPIRES ONE (1) YEAR FROM DATE OF ISSUE.

LOCATION OF PROPERTY

NORTH EAST
SOUTH WEST

1. DESCRIPTION OF STRUCTURE _____
_____ TYPE _____ NO. OF STORIES _____
2. PROPOSED USE _____ USE GROUP _____
3. TWO (2) COPIES OF PLANS AND SPECIFICATIONS ATTACHED ☐ YES ☐ NO
4. PLOT PLAN ATTACHED ☐ YES ☐ NO

REMARKS: INSTALL BACKUP POWER SUPPY CONSISTING OF TWO CABINETS, AND A CONCRETE SLAB ON AN EXISTING PLATFORM.

This is to certify that I am the owner or authorized agent for the owner. All work covered by this application has been authorized by the owner of this property and will be done according to the Connecticut Basic Building Code. As the applicant I understand that a Certificate of Use and Occupanty-document is required before occupancy.

Pd. CK # 35038768

12/7/11
DATE

Lynda Bourgeois
APPLICANT SIGNATURE

Beacon™ Town of North Canaan, CT

Summary

Parcel ID	15/086-2
Account Number	98102063
Section Plat	
Neighborhood	7 - Commercial
Property Address	Lower Rd 036 North Canaan, CT 06018
Legal Description	CENSUS TRACT: 2602 (Note: Not to be used on legal documents)
Acreage	6.37
Class	901 - BAAX Municipal
Tax District/Area	100 - NORTH CANAAN, CT

Owner

Primary Owner
Litchfield County Dispatch Inc
452 Bantam Rd
Litchfield, CT 06759-0000

Land

Lot Dimensions	Regular Lot: x
Lot Area	6.3700 Acres; 277477 SF

Buildings

Commercial Building	
Primary Use	Storage - Maintenance Bldg
Year Built	1999
Building Type	Storage - Maintenance Bldg:001
Condition	AV - Normal for age
Exterior Material	
Roof Type	4
Roof Material	
Interior Walls	
Predominate Floor Covs	
Stories/Floors	1
Above-Grade Living Area	1804 SF
Attic Type	None
Number of Rooms	1
Basement Type	
Basement Area	SF
Basement Finished Area	SF
Number of Bathrooms	
Central Air	N
Heat Type	0 sf
Porches	
Decks	SF
Garages	
Other Features	Cell Tower-Self Supported General Purpose Bldg Steel Frame General Purpose Bldg Steel Frame General Purpose Bldg Steel Frame

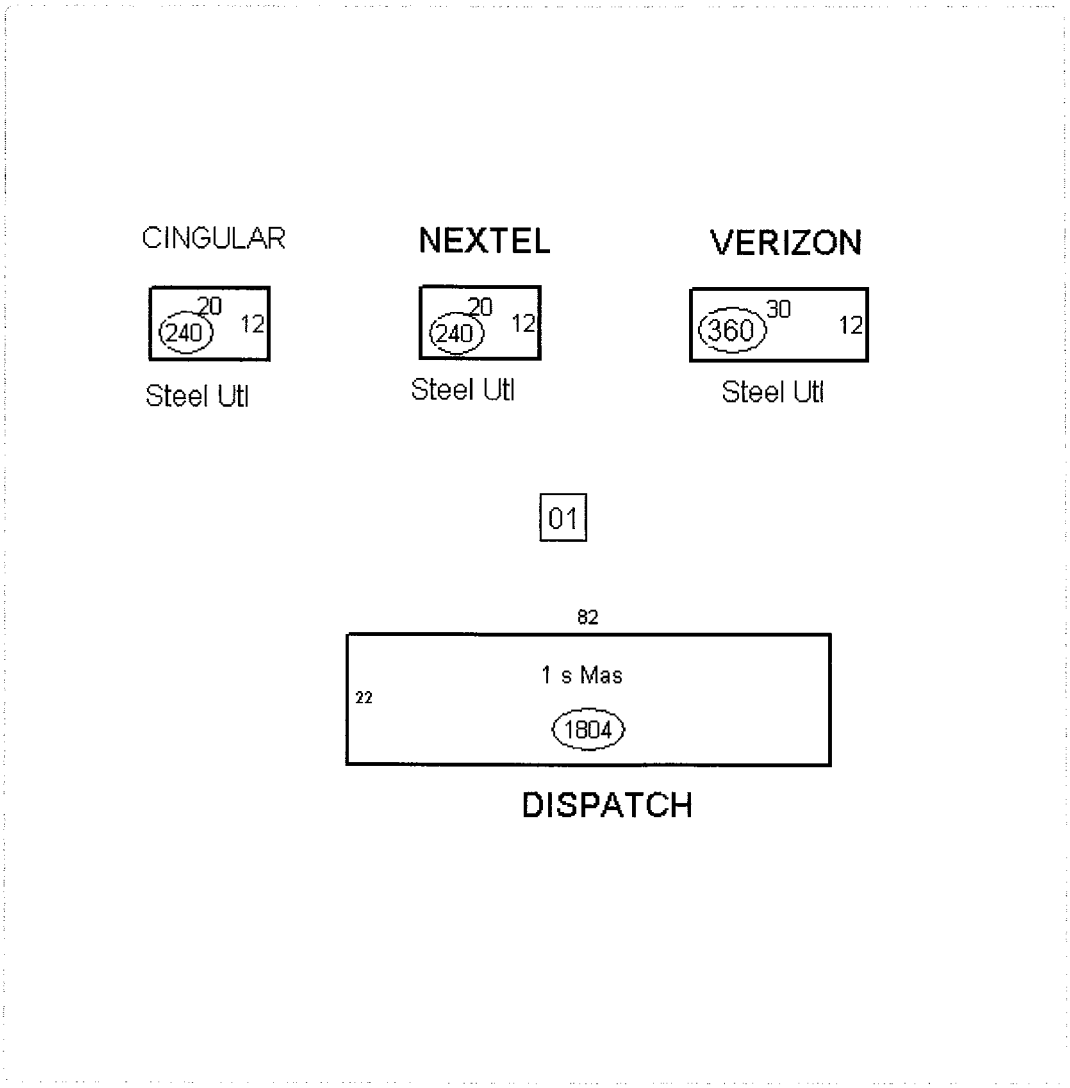
Sales

Date	Grantor	Recording	Type	Amount
12/29/1997	FOLEY THOMAS J JR & DOROTHY	Bk:0084 Pg:984		$75,000.00

Valuation

Assessment Year		**10/01/2012**	**10/01/2007**
Reason for Change		2012 REVAL	2007 Reval
VALUATION	Land	$107,920	$126,220
(Market Value)	Improvements	$977,310	$956,910
	Total	**$1,085,230**	**$1,083,130**
VALUATION	Land	$75,540	$88,350
(Assessed/Use Value)	Improvements	$684,130	$669,850
	Total	**$759,670**	**$758,200**

Sketches



Last Data Upload Data: 1/10/2018 10:02:42 PM

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

SPRINT Existing Facility

Site ID: CT33XC025

Litchfield County Dispatch
39 Lower Road
North Canaan, CT 06018

December 23, 2017

EBI Project Number: 6217005753

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	13.92 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

December 23, 2017

SPRINT
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Emissions Analysis for Site: **CT33XC025 – Litchfield County Dispatch**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **39 Lower Road, North Canaan, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

General Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 850 MHz Band is approximately 567 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **39 Lower Road, North Canaan, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.

4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

7) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antennas used in this modeling are the **RFS APXV9ERR18-C-A20 and the Commscope DT465B-2XR** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerlines of the proposed antennas are **154 feet** above ground level (AGL) for **Sector A**, **154 feet** above ground level (AGL) for **Sector B** and **154 feet** above ground level (AGL) for Sector C.

10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general population threshold limits.

EBI Consulting
environmental | engineering | due diligence

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXV9ERR18-C-A20	Make / Model:	RFS APXV9ERR18-C-A20	Make / Model:	RFS APXV9ERR18-C-A20
Gain:	11.9 / 14.9 dBd	Gain:	11.9 / 14.9 dBd	Gain:	11.9 / 14.9 dBd
Height (AGL):	**154 feet**	Height (AGL):	**154 feet**	Height (AGL):	**154 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts
ERP (W):	5,873.76	ERP (W):	5,873.76	ERP (W):	5,873.76
Antenna A1 MPE%	**1.08 %**	Antenna B1 MPE%	**1.08 %**	Antenna C1 MPE%	**1.08 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR
Gain:	15.05 dBd	Gain:	15.05 dBd	Gain:	15.05 dBd
Height (AGL):	**154 feet**	Height (AGL):	**154 feet**	Height (AGL):	**154 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	5,118.23	ERP (W):	5,118.23	ERP (W):	5,118.23
Antenna A2 MPE%	**0.84 %**	Antenna B2 MPE%	**0.84 %**	Antenna C2 MPE%	**0.84 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**1.92 %**
CT State Police	3.24 %
LCD	1.65 %
CL&P	2.17 %
Arch	0.45 %
Town of No. Canaan	0.49 %
AT&T	2.42 %
Verizon Wireless	1.18 %
Nextel	0.40 %
Site Total MPE %:	**13.92 %**

SPRINT Sector A Total:	1.92 %
SPRINT Sector B Total:	1.92 %
SPRINT Sector C Total:	1.92 %
Site Total:	13.92 %

SPRINT _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Sprint 850 MHz CDMA	1	309.76	154	0.51	850 MHz	567	0.08%
Sprint 850 MHz LTE	2	309.76	154	1.02	850 MHz	567	0.18%
Sprint 1900 MHz (PCS) CDMA	5	494.45	154	4.06	1900 MHz (PCS)	1000	0.41%
Sprint 1900 MHz (PCS) LTE	2	1,236.12	154	4.06	1900 MHz (PCS)	1000	0.41%
Sprint 2500 MHz (BRS) LTE	8	639.78	154	8.40	2500 MHz (BRS)	1000	0.84%
						Total:	**1.92%**

EBI Consulting
environmental | engineering | due diligence

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the SPRINT facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

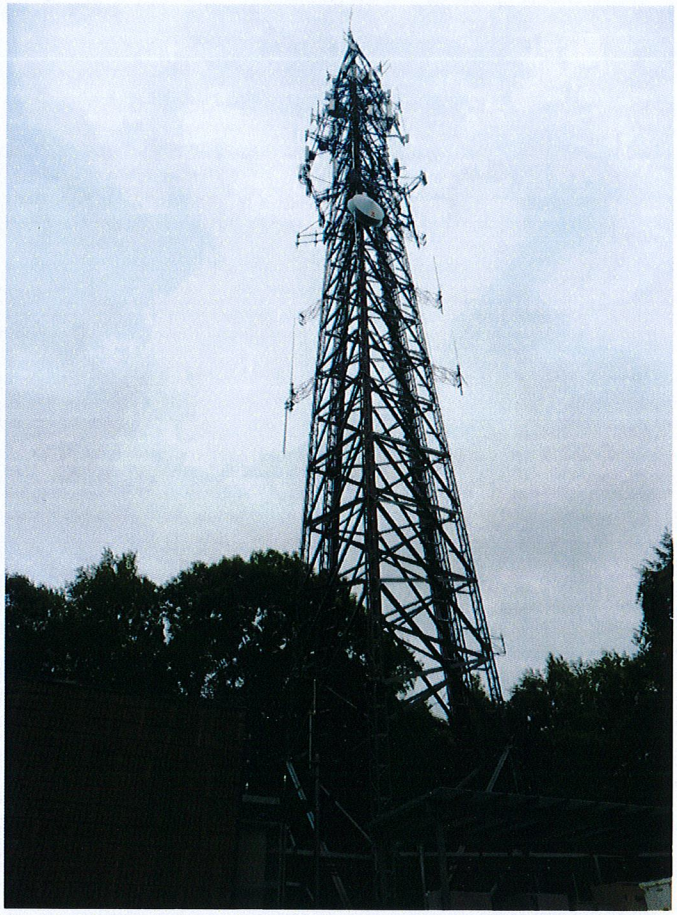
SPRINT Sector	Power Density Value (%)
Sector A:	1.92 %
Sector B:	1.92 %
Sector C:	1.92 %
SPRINT Maximum Total (per sector):	1.92 %
Site Total:	13.92 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **13.92 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

STRUCTURAL ANALYSIS REPORT
SELF-SUPPORT TOWER

Prepared For:
Com-Ex Consultants, LLC
115 Route 46 – Suite E39
Mountain Lakes, NJ 07046



Structure Rating

Self-Support Tower:	**Pass**

Sincerely,
Destek Engineering, LLC

STATE OF CONNECTICUT
AHMET COLAKOGLU
PEN. 27057
PROFESSIONAL ENGINEER

12-18

Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

Sprint Site ID: CT33XC025
39 Lower Road
North Canaan, CT 06018
Litchfield County

Destek Job No: 1729058

December 13, 2017

CONTENTS

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the existing 194.8' self-support tower located at 39 Lower Road, North Canaan, CT 06018 for the additions and alterations proposed by Sprint.

The structural analysis is based on the following documentation provided to Destek Engineering, LLC (Destek):

- Structural Analysis report prepared by Maser Consulting, P.A., dated 09/13/2016.
- Tower Mapping report prepared by TEP, dated 09/08/2016.
- Construction Drawings prepared by Com Ex Consultants, dated 09/22/2017.

1.1 STRUCTURE

The structure is a 3-sided, 194.8' tall self-support tower. It is formed by (9) 20' sections, (1) 10' Section, and (1) 4'-10" section with truss legs and angle bracing. The tower is 25.00' wide at the base with a constant taper down to 11' wide 140' above grade. There is a second 3-sided tower constructed inside the subject structure which primarily supports the feedlines servicing the equipment supported by the subject structure. Information regarding the interior structure geometry was not available at the time of analysis. Please refer to the software output in Appendix A, for tower geometry, member sizes and other details regarding the subject structure.

2.0 EXISTING AND PROPOSED APPURTENANCES

The analysis is based on the following existing and proposed appurtenances:

Existing Configuration of Sprint Appurtenances:

Rad Center (ft.)	Antennas & Equipment	Coax*	Mount
154.0	(3) APXV9ERR18 (3) RRH2x50-800 + (3) 1900 RRH	(3) 1-1/4" (1) Ground	(3) Sector Mount

***Coax attached to inner tower unless noted otherwise**

Proposed and Final Configuration of Sprint Appurtenances:

Rad Center (ft.)	Antennas & Equipment	Coax*	Mount
154.0	(3) APXV9ERR18 (3) RRH2x50-800 (3) DT465B-2XR (3) RRH8x20-25 (3) 800MHz RRH Notch Filter (3) RRH2x50-800 + (3) 1900 RRH	(3) 1-1/4" (1) 1-1/4" Hybriflex (1) Ground	(3) Sector Mount

***Coax attached to inner tower unless noted otherwise**

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

Existing Configuration of Appurtenances by Others:

Rad Center (ft.)	Antennas & Equipment	Coax*	Mount
187.5	(1) 6' Dish w/ Radome	(1) EW65	(1) Pipe Mount
183.7	(1) ANT150D3 (1) C216004569 (4) OGT9-840N	(4) 7/8" (2) 1-5/8"	(3) Side Arm
183.0	(1) ANT150F2	(1) 1-5/8"	(1) Side Arm
169.0	(6) LPA-80080-4CF-EDIN-4 (3) BXA-70063-6CF-EDIN-2 (3) BXA-171085-8BF-EDIN-4 (1) DB222-A (3) Diplexer	(12) 1-5/8"** (1) 7/8"	(3) Sector Mount
137.0	(6) RA21.7770.00 (3) RRUS11 B12 (6) TT19-08BP111-001 (1) SBNHH-1D65A (2) HPA-65R-BUU-H6 (3) RRUS-12+A2 (1) DC6	(12) 1-5/8" (2) 3/4" (1) 5/16"	(3) Sector Mount
125.0	-	-	(3) Sector Mount
120.0	-	-	(1) Side Arm
106.0	(1) ANT150D3	(1) 7/8"	(1) Side Arm
99.0	(1) 458-2	(1) 7/8"	(2) Side Arm
99.0	(1) 6' Dish w/ Radome	(1) EW65	(1) Pipe Mount
79.5	(1) 7 Element Yagi (1) PD1142-2C (1) BCD-80609 (1) 1-Element Dipole (1) 20'x2.75" Omni	(1) 1-5/8" (2) 1/2" (1) 3/8" (1) 7/8"	(2) Side Arm
79.0	(1) Dipole	(1) 1/2"	(1) Side Arm
32.8	(1) GPS	(1) 1/2"	(1) Side Arm

***Coax attached to inner tower unless noted otherwise**

**** Coax attached to Exterior tower**

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

3.0 CODES AND LOADING

The tower was analyzed per *TIA/EIA-222-G* as referenced by the *2012 International Building Code* and the *2016 Connecticut State Building* Code with all of the adopted Addendums and Supplements. The following wind loading was used:

- Ultimate design wind speed 115 mph (nominal design wind speed 89 mph) without ice (V)
- Basic wind speed 40 mph with 1" escalating ice (V_i)
- Exposure Category C
- Topographic Category 1
- Risk Category II (I_w = 1.0)

The following load combinations were used with wind blowing at 0°, 30°, 45°, 60°, and 90° measured from a line normal to the face of the monopole.

- 1.2 D + 1.6 W_o
- 0.9 D + 1.6 W_o
- 1.2 D + 1.0 D_i + 1.0 W_i + 1.0 T_i

D: Dead load of structures and appurtenances
D_i: Weight of ice due to factored ice thickness (based upon t_i)
T_i: Load effects due to temperature
W_o: Wind load without ice (based upon V)
W_i: Wind load with ice (based upon V_i)

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

The analysis is based on the information provided and is assumed to be current and correct. Unless otherwise noted, the structure is assumed to be in good condition, free of defects and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. Destek will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc. or lack of maintenance.

The analysis does not include a qualification of the mounts attached on the structure or their connections. The analysis is performed to verify the capacity of the main structural members, which is the current practice in the tower industry.

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed appurtenances. Any deviation of the appurtenances and placement, etc., will require Destek to generate an additional structural analysis.

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

5.0 ANALYSIS AND ASSUMPTIONS

The tower was analyzed by utilizing tnxTower, a 3-Dimensional finite element software, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix-A of this report.

Information regarding steel grades was not available at the time of analysis. The following grades have been assumed;

- Legs: A572-50
- Bracing members: A36
- Flange connection bolts: A325N
- Anchor Rods: A449

6.0 CONCLUSION AND RESULTS

Based on an analysis per *TIA/EIA-222-G*, the existing tower has **adequate** structural capacity for the proposed modifications by Sprint. For the aforementioned load combinations and as a maximum, Anchor bolts are stressed to **50.9%** of their capacity. The tower legs, and bracing members are stressed to **47.5%** and **49.3%** of their structural capacities, respectively.

Information regarding the tower base foundation was not available at the time of this analysis, thus a qualification of the foundation could not be completed.

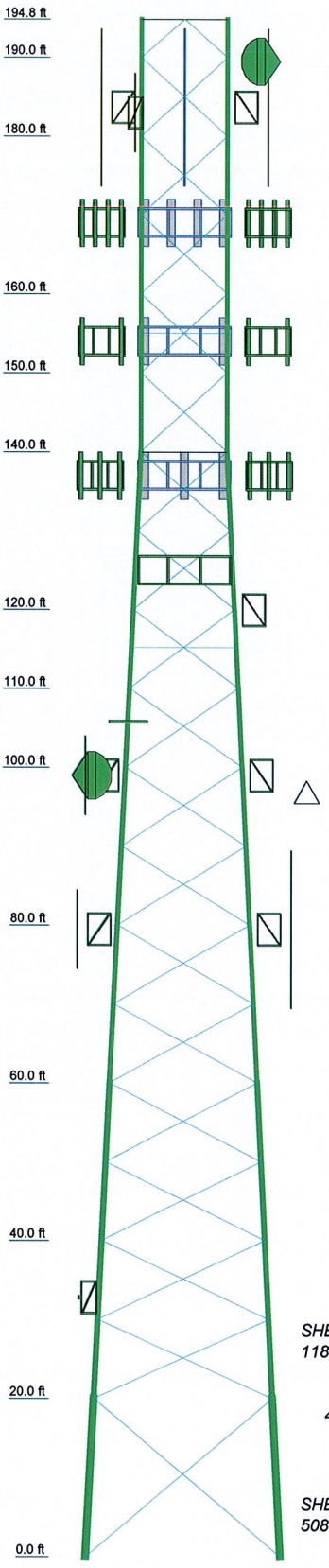
Therefore, the proposed additions and alterations by Sprint **can** be implemented as intended with the conditions outlined in this report.

Should you have any questions about this report, please contact us at (770) 693-0835.

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

APPENDIX A
SOFTWARE OUTPUT

Section		T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs		Pirod 112738	Pirod 105220		Pirod 105219		Pirod 105218			Pirod 105217				
Leg Grade		A572-50												
Diagonals		2L3 1/2x3 1/2x3/8x1	L5x5x3/8		L4x4x3/8	L4x4x1/4	L3 1/2x3 1/2x5/16		L3x3x5/16			L3x3x3/16	B	A
Diagonal Grade		A36												
Top Girts					N.A.				L3 1/2x3 1/2x3/8			N.A.		A
Sec. Horizontals				N.A.				L3x3x5/16	N.A.		C	N.A.		
Face Width (ft)	25	23	21		19	17	15	14	13	11				
# Panels @ (ft)		1 @ 20						17 @ 10					D	
Weight (lb)	47887.6	8404.7	7108.9	6830.5	5362.9	4407.2	1922.9	2143.7	3752.3	1496.3	1742.7	2552.8	1216.5	945.0



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Pipe Mount [PM 602-1]	187.5	Pipe Mount [PM 601-3]	154
DA6-107AC	187.5	Sector Mount [SM 406-3]	137
Pirod 7' Side Arm Mount	183.667	(2) RA21.7770.00 w/ Mount Pipe	137
Pirod 7' Side Arm Mount	183.667	(2) RA21.7770.00 w/ Mount Pipe	137
ANT150D3	183.667	(2) RA21.7770.00 w/ Mount Pipe	137
C216004569	183.667	RRUS 11 B12	137
(2) OGT9-840	183.667	RRUS 11 B12	137
(2) OGT9-840	183.667	RRUS 11 B12	137
Pirod 7' Side Arm Mount	183.667	(2) TT19-08BP111-001	137
Side Arm Mount [SO 304-1]	183	(2) TT19-08BP111-001	137
ANT150F2	183	(2) TT19-08BP111-001	137
Sector Mount [SM 201-3]	169	SBNHH-1D65A w/ Mount Pipe	137
(2) LPA-80080-4CF-EDIN-4	169	HPA-65R-BUU-H6 w/ Mount Pipe	137
(2) LPA-80080-4CF-EDIN-4	169	HPA-65R-BUU-H6 w/ Mount Pipe	137
(2) LPA-80080-4CF-EDIN-4	169	RRUS12/RRUS A2	137
LPA-70063/6CF-EDIN-2	169	RRUS12/RRUS A2	137
LPA-70063/6CF-EDIN-2	169	RRUS12/RRUS A2	137
LPA-70063/6CF-EDIN-2	169	DC6-48-60-18-8F	137
BXA-171085-8BF-EDIN-4	169	Pipe Mount [PM 601-3]	137
BXA-171085-8BF-EDIN-4	169	Sector Mount [SM 701-3]	125
BXA-171085-8BF-EDIN-4	169	6' x 2" Mount Pipe	125
DB222	169	6' x 2" Mount Pipe	125
Pipe Mount [PM 601-3]	169	6' x 2" Mount Pipe	125
Sector Mount [SM 409-3]	154	Side Arm Mount [SO 203-3]	125
6' x 2" Mount Pipe	154	Pirod 7' Side Arm Mount	120
6' x 2" Mount Pipe	154	ANT150D3	106
6' x 2" Mount Pipe	154	7' Ice Shield	106
APXV9ERR18 w/ Mount Pipe	154	Pirod 7' Side Arm Mount	106
APXV9ERR18 w/ Mount Pipe	154	PD458-2	99
APXV9ERR18 w/ Mount Pipe	154	Pirod 7' Side Arm Mount	99
1900MHz RRH	154	Pirod 7' Side Arm Mount	99
1900MHz RRH	154	Pipe Mount [PM 601-1]	97
1900MHz RRH	154	Side Arm Mount [SO 601-1]	97
FD-RRH-2x50-800	154	DA6-107AC	97
FD-RRH-2x50-800	154	Pirod 7' Side Arm Mount	79.5
FD-RRH-2x50-800	154	PD1142-2C	79.5
FD-RRH-2x50-800 W/FILTER	154	BCD-80609	79.5
FD-RRH-2x50-800 W/FILTER	154	3" Dia 20' Omni	79.5
FD-RRH-2x50-800 W/FILTER	154	1-Element Dipole	79.5
TD-RRH8x20	154	Pirod 7' Side Arm Mount	79.5
TD-RRH8x20	154	Pirod 7' Side Arm Mount	79
TD-RRH8x20	154	10' Dipole AF	79
DT465B-2XR w/ Mount Pipe	154	Side Arm Mount [SO 304-1]	32.833
DT465B-2XR w/ Mount Pipe	154	GPS	32.833
DT465B-2XR w/ Mount Pipe	154		

ALI
AR
MA

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	2L2 1/2x2 1/2x3/16x1/2	C	L3 1/2x3 1/2x5/16
B	L2 1/2x2 1/2x3/16	D	1 @ 4.833

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

240813 lb

SHEAR
11848 lb

TORQ
40 mph

SHEAR
50834 lb

MOMENT
5527040 lb-ft

TORQUE 12317 lb-ft
REACTIONS - 89 mph WIND

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 89 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 40 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 49.3%

DESTEK ENGINEERING
Destek Engineering, LLC
1281 Kennestone Circle, Suite 100
Marietta, GA 30066
Phone: (770) 693-0835
FAX:

Job: *CT33XC025*			
Project: *1729058*			
Client: ComEx	Drawn by: Ahmet Colakoglu		App'd:
Code: TIA-222-G	Date: 12/13/17		Scale: NTS
Path: Z:\Projects\2017\29 - ComEx\058 - CT33XC025\TNX\CT33XC025.eri			Dwg No. E-1

tnxTower	Job	Page
	CT33XC025	1 of 32
Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693-0835 FAX:	**Project** 1729058	**Date** 11:24:27 12/13/17
	Client ComEx	**Designed by** Ahmet Colakoglu

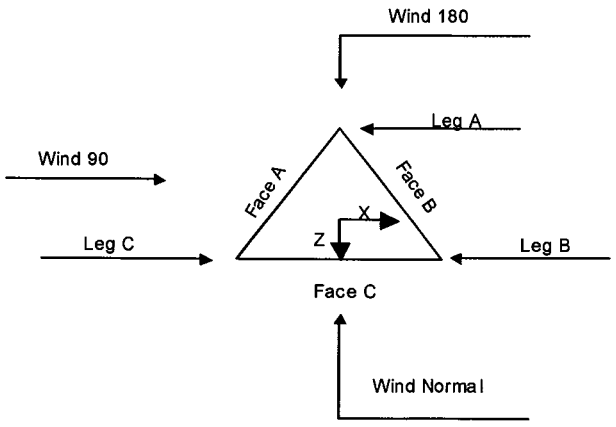
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 194.83 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 11.00 ft at the top and 25.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Litchfield County, Connecticut.
Basic wind speed of 89 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 40 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	√ SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric		



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	194.83-190.00			11.00	1	4.83
T2	190.00-180.00			11.00	1	10.00
T3	180.00-160.00			11.00	1	20.00
T4	160.00-150.00			11.00	1	10.00
T5	150.00-140.00			11.00	1	10.00
T6	140.00-120.00			11.00	1	20.00
T7	120.00-110.00			13.00	1	10.00
T8	110.00-100.00			14.00	1	10.00
T9	100.00-80.00			15.00	1	20.00
T10	80.00-60.00			17.00	1	20.00
T11	60.00-40.00			19.00	1	20.00
T12	40.00-20.00			21.00	1	20.00
T13	20.00-0.00			23.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	194.83-190.00	4.83	K Brace Down	No	Yes	0.0000	0.0000
T2	190.00-180.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T3	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T4	160.00-150.00	10.00	X Brace	No	Yes	0.0000	0.0000
T5	150.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T6	140.00-120.00	10.00	X Brace	No	Yes	0.0000	0.0000
T7	120.00-110.00	10.00	X Brace	No	Yes	0.0000	0.0000
T8	110.00-100.00	10.00	X Brace	No	No	0.0000	0.0000
T9	100.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T10	80.00-60.00	10.00	X Brace	No	No	0.0000	0.0000
T11	60.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T12	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T13	20.00-0.00	20.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 194.83-190.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Double Equal Angle	2L2 1/2x2 1/2x3/16x1/2	A36 (36 ksi)
T2 190.00-180.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T3 180.00-160.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Single Angle	L3x3x3/16	A36 (36 ksi)
T4 160.00-150.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Single Angle	L3x3x5/16	A36 (36 ksi)
T5 150.00-140.00	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Single Angle	L3x3x5/16	A36 (36 ksi)
T6 140.00-120.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Single Angle	L3x3x5/16	A36 (36 ksi)
T7 120.00-110.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T8 110.00-100.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T9 100.00-80.00	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Single Angle	L4x4x1/4	A36 (36 ksi)
T10 80.00-60.00	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Single Angle	L4x4x3/8	A36 (36 ksi)
T11 60.00-40.00	Truss Leg	Pirod 105220	A572-50 (50 ksi)	Single Angle	L5x5x3/8	A36 (36 ksi)
T12 40.00-20.00	Truss Leg	Pirod 105220	A572-50 (50 ksi)	Single Angle	L5x5x3/8	A36 (36 ksi)
T13 20.00-0.00	Truss Leg	Pirod 112738	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x3/8x1	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T6 140.00-120.00	Equal Angle	L3 1/2x3 1/2x3/8	A36 (36 ksi)	Pipe		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 194.83-190.00	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2 1/2x2 1/2x3/16x1/2	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T4 160.00-150.00	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T7 120.00-110.00	Equal Angle	L3x3x5/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 194.83-190.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T2 190.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T3 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T4 160.00-150.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T5 150.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T6 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T7 120.00-110.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 110.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T10 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T11 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T12 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T13 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1 194.83-190.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T2 190.00-180.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T3 180.00-160.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T4 160.00-150.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T5 150.00-140.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T6 140.00-120.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T7 120.00-110.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T8 110.00-100.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T9 100.00-80.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T10 80.00-60.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T11 60.00-40.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T12 40.00-20.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
T13 20.00-0.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T1 194.83-190.00	1	0.5	0.85	1	0.5	0.85

Tower Elevation ft	Truss-Leg K Factors					
	Truss-Legs Used As Leg Members			Truss-Legs Used As Inner Members		
	Leg Panels	X Brace Diagonals	Z Brace Diagonals	Leg Panels	X Brace Diagonals	Z Brace Diagonals
T2 190.00-180.00	1	0.5	0.85	1	0.5	0.85
T3 180.00-160.00	1	0.5	0.85	1	0.5	0.85
T4 160.00-150.00	1	0.5	0.85	1	0.5	0.85
T5 150.00-140.00	1	0.5	0.85	1	0.5	0.85
T6 140.00-120.00	1	0.5	0.85	1	0.5	0.85
T7 120.00-110.00	1	0.5	0.85	1	0.5	0.85
T8 110.00-100.00	1	0.5	0.85	1	0.5	0.85
T9 100.00-80.00	1	0.5	0.85	1	0.5	0.85
T10 80.00-60.00	1	0.5	0.85	1	0.5	0.85
T11 60.00-40.00	1	0.5	0.85	1	0.5	0.85
T12 40.00-20.00	1	0.5	0.85	1	0.5	0.85
T13 20.00-0.00	1	0.5	0.85	1	0.5	0.85

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 194.83-190.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 190.00-180.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 160.00-150.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 150.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 120.00-110.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 110.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T11 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 194.83-190.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	1.0000 A325N	1	0.6250 A325N	0
T2 190.00-180.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T3 180.00-160.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T4 160.00-150.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.5000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.5000 A325N	2
T5 150.00-140.00	Flange	0.0000 A325N	0	1.0000 A325N	1	0.7500 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T6 140.00-120.00	Flange	1.0000 A325N	6	1.0000 A325N	1	1.0000 A325N	1	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T7 120.00-110.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.5000 A325N	1
T8 110.00-100.00	Flange	0.0000 A325N	0	1.0000 A325N	1	0.7500 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T9 100.00-80.00	Flange	1.2500 A325N	6	1.2500 A325N	1	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T10 80.00-60.00	Flange	1.2500 A325N	6	1.2500 A325N	1	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T11 60.00-40.00	Flange	1.2500 A325N	6	1.2500 A325N	1	0.6250 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T12 40.00-20.00	Flange	1.2500 A325N	6	1.2500 A325N	1	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T13 20.00-0.00	Flange	2.0000 A325N	6	1.0000 A325N	2	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
AVA7-50 (1-5/8 LOW DENSI.	A	No	Ar (CaAa)	167.00 - 7.00	-8.0000	0.44	12	6	1.0000	1.9800		0.72

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
FOAM) Feedline Ladder (Rail)	A	No	Af (CaAa)	194.83 - 7.00	-8.0000	0.44	1	1	1.7500	1.7500		3.00
Feedline Ladder (Rail)	C	No	Af (CaAa)	194.83 - 7.00	-8.0000	0.44	1	1	1.7500	1.7500		3.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	194.83-190.00	A	0.000	0.000	1.410	0.000	14.50
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	1.410	0.000	14.50
T2	190.00-180.00	A	0.000	0.000	2.917	0.000	30.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	2.917	0.000	30.00
T3	180.00-160.00	A	0.000	0.000	22.465	0.000	120.48
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.833	0.000	60.00
T4	160.00-150.00	A	0.000	0.000	26.677	0.000	116.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	2.917	0.000	30.00
T5	150.00-140.00	A	0.000	0.000	26.677	0.000	116.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	2.917	0.000	30.00
T6	140.00-120.00	A	0.000	0.000	53.353	0.000	232.80
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.833	0.000	60.00
T7	120.00-110.00	A	0.000	0.000	26.677	0.000	116.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	2.917	0.000	30.00
T8	110.00-100.00	A	0.000	0.000	26.677	0.000	116.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	2.917	0.000	30.00
T9	100.00-80.00	A	0.000	0.000	53.353	0.000	232.80
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.833	0.000	60.00
T10	80.00-60.00	A	0.000	0.000	53.353	0.000	232.80
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.833	0.000	60.00
T11	60.00-40.00	A	0.000	0.000	53.353	0.000	232.80
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.833	0.000	60.00
T12	40.00-20.00	A	0.000	0.000	53.353	0.000	232.80
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.833	0.000	60.00
T13	20.00-0.00	A	0.000	0.000	34.680	0.000	151.32
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.792	0.000	39.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	194.83-190.00	A	2.386	0.000	0.000	3.716	0.000	86.38
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	3.716	0.000	86.38
T2	190.00-180.00	A	2.376	0.000	0.000	7.669	0.000	177.81
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	7.669	0.000	177.81
T3	180.00-160.00	A	2.356	0.000	0.000	35.961	0.000	854.02
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	15.258	0.000	351.75
T4	160.00-150.00	A	2.335	0.000	0.000	37.089	0.000	886.55
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	7.586	0.000	173.79
T5	150.00-140.00	A	2.319	0.000	0.000	37.007	0.000	881.65
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	7.555	0.000	172.30
T6	140.00-120.00	A	2.294	0.000	0.000	73.747	0.000	1747.44
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	15.009	0.000	339.81
T7	120.00-110.00	A	2.266	0.000	0.000	36.725	0.000	864.96
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	7.449	0.000	167.27
T8	110.00-100.00	A	2.245	0.000	0.000	36.617	0.000	858.56
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	7.408	0.000	165.35
T9	100.00-80.00	A	2.211	0.000	0.000	72.869	0.000	1695.79
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	14.678	0.000	324.32
T10	80.00-60.00	A	2.156	0.000	0.000	72.288	0.000	1661.97
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	14.458	0.000	314.27
T11	60.00-40.00	A	2.085	0.000	0.000	71.534	0.000	1618.49
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	14.173	0.000	301.48
T12	40.00-20.00	A	1.981	0.000	0.000	70.436	0.000	1556.20
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	13.757	0.000	283.40
T13	20.00-0.00	A	1.775	0.000	0.000	44.370	0.000	933.38
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	8.406	0.000	162.10

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	194.83-190.00	-1.1723	-0.7696	-1.7519	-1.1501
T2	190.00-180.00	-1.4012	-0.9199	-2.0238	-1.3286
T3	180.00-160.00	-0.9372	-4.0114	-1.7753	-2.2070
T4	160.00-150.00	-0.4749	-6.8989	-1.4057	-3.1347
T5	150.00-140.00	-0.5087	-7.3905	-1.4510	-3.5290
T6	140.00-120.00	-0.5887	-7.5998	-1.5348	-3.6591
T7	120.00-110.00	-0.6979	-7.9373	-1.6467	-3.8242
T8	110.00-100.00	-0.8477	-9.0510	-1.8464	-4.6204
T9	100.00-80.00	-0.9416	-9.3350	-2.0013	-4.9339
T10	80.00-60.00	-1.1166	-10.2850	-2.2368	-5.4498
T11	60.00-40.00	-1.1807	-10.2953	-2.3618	-5.7352
T12	40.00-20.00	-1.3213	-11.0416	-2.5405	-6.2149

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T13	20.00-0.00	-1.2414	-10.0822	-2.0193	-5.1208

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	Feedline Ladder (Rail)	190.00 - 194.83	0.6000	0.4366
T1	3	Feedline Ladder (Rail)	190.00 - 194.83	0.6000	0.4366
T2	2	Feedline Ladder (Rail)	180.00 - 190.00	0.6000	0.5398
T2	3	Feedline Ladder (Rail)	180.00 - 190.00	0.6000	0.5398
T3	1	AVA7-50 (1-5/8 LOW DENSI. FOAM)	160.00 - 167.00	0.6000	0.5322
T3	2	Feedline Ladder (Rail)	160.00 - 180.00	0.6000	0.5322
T3	3	Feedline Ladder (Rail)	160.00 - 180.00	0.6000	0.5322
T4	1	AVA7-50 (1-5/8 LOW DENSI. FOAM)	150.00 - 160.00	0.6000	0.4794
T4	2	Feedline Ladder (Rail)	150.00 - 160.00	0.6000	0.4794
T4	3	Feedline Ladder (Rail)	150.00 - 160.00	0.6000	0.4794
T5	1	AVA7-50 (1-5/8 LOW DENSI. FOAM)	140.00 - 150.00	0.6000	0.5349
T5	2	Feedline Ladder (Rail)	140.00 - 150.00	0.6000	0.5349
T5	3	Feedline Ladder (Rail)	140.00 - 150.00	0.6000	0.5349
T6	1	AVA7-50 (1-5/8 LOW DENSI. FOAM)	120.00 - 140.00	0.6000	0.5356
T6	2	Feedline Ladder (Rail)	120.00 - 140.00	0.6000	0.5356
T6	3	Feedline Ladder (Rail)	120.00 - 140.00	0.6000	0.5356
T7	1	AVA7-50 (1-5/8 LOW DENSI. FOAM)	110.00 - 120.00	0.6000	0.5350
T7	2	Feedline Ladder (Rail)	110.00 - 120.00	0.6000	0.5350
T7	3	Feedline Ladder (Rail)	110.00 - 120.00	0.6000	0.5350
T8	1	AVA7-50 (1-5/8 LOW DENSI. FOAM)	100.00 - 110.00	0.6000	0.6000
T8	2	Feedline Ladder (Rail)	100.00 - 110.00	0.6000	0.6000
T8	3	Feedline Ladder (Rail)	100.00 - 110.00	0.6000	0.6000
T9	1	AVA7-50 (1-5/8 LOW DENSI. FOAM)	80.00 - 100.00	0.6000	0.6000
T9	2	Feedline Ladder (Rail)	80.00 - 100.00	0.6000	0.6000
T9	3	Feedline Ladder (Rail)	80.00 - 100.00	0.6000	0.6000
T10	1	AVA7-50 (1-5/8 LOW	60.00 - 80.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		DENSI. FOAM)			
T10	2	Feedline Ladder (Rail)	60.00 - 80.00	0.6000	0.6000
T10	3	Feedline Ladder (Rail)	60.00 - 80.00	0.6000	0.6000
T11	1	AVA7-50 (1-5/8 LOW	40.00 - 60.00	0.6000	0.6000
		DENSI. FOAM)			
T11	2	Feedline Ladder (Rail)	40.00 - 60.00	0.6000	0.6000
T11	3	Feedline Ladder (Rail)	40.00 - 60.00	0.6000	0.6000
T12	1	AVA7-50 (1-5/8 LOW	20.00 - 40.00	0.6000	0.6000
		DENSI. FOAM)			
T12	2	Feedline Ladder (Rail)	20.00 - 40.00	0.6000	0.6000
T12	3	Feedline Ladder (Rail)	20.00 - 40.00	0.6000	0.6000
T13	1	AVA7-50 (1-5/8 LOW	7.00 - 20.00	0.6000	0.6000
		DENSI. FOAM)			
T13	2	Feedline Ladder (Rail)	7.00 - 20.00	0.6000	0.6000
T13	3	Feedline Ladder (Rail)	7.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Pipe Mount [PM 602-1]	B	From Leg	1.00	0.0000	187.50	No Ice	5.25	1.58	93.00
			0.00			1/2" Ice	6.50	1.95	117.74
			0.00			1" Ice	7.75	2.32	142.48
***									
Pirod 7' Side Arm Mount	A	From Leg	2.75	0.0000	183.67	No Ice	9.63	9.63	160.00
			0.00			1/2" Ice	11.56	11.56	190.00
			0.00			1" Ice	13.49	13.49	220.00
Pirod 7' Side Arm Mount	B	From Leg	2.75	0.0000	183.67	No Ice	9.63	9.63	160.00
			0.00			1/2" Ice	11.56	11.56	190.00
			0.00			1" Ice	13.49	13.49	220.00
Pirod 7' Side Arm Mount	C	From Leg	2.75	0.0000	183.67	No Ice	9.63	9.63	160.00
			0.00			1/2" Ice	11.56	11.56	190.00
			0.00			1" Ice	13.49	13.49	220.00
ANT150D3	A	From Leg	6.00	0.0000	183.67	No Ice	1.60	1.60	18.00
			0.00			1/2" Ice	2.88	2.88	23.40
			0.00			1" Ice	4.16	4.16	28.80
C216004569	A	From Leg	6.00	0.0000	183.67	No Ice	1.60	1.60	18.00
			0.00			1/2" Ice	2.88	2.88	23.40
			0.00			1" Ice	4.16	4.16	28.80
(2) OGT9-840	B	From Leg	6.00	0.0000	183.67	No Ice	2.27	2.27	18.50
			0.00			1/2" Ice	3.44	3.44	36.09
			0.00			1" Ice	4.61	4.61	60.98
(2) OGT9-840	C	From Leg	6.00	0.0000	183.67	No Ice	2.27	2.27	18.50
			0.00			1/2" Ice	3.44	3.44	36.09
			0.00			1" Ice	4.61	4.61	60.98
***									
ANT150F2	C	From Leg	1.00	0.0000	183.00	No Ice	1.23	1.23	13.00
			0.00			1/2" Ice	1.53	1.53	22.47
			0.00			1" Ice	1.84	1.84	35.41
Side Arm Mount [SO 304-1]	C	From Leg	1.00	0.0000	183.00	No Ice	0.63	0.94	23.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1/2" Ice	1.00	1.45	31.92
			0.00			1" Ice	1.37	1.96	40.83
***									
Pipe Mount [PM 601-3]	C	None		0.0000	169.00	No Ice	4.39	4.39	195.00
						1/2" Ice	5.48	5.48	237.41
						1" Ice	6.57	6.57	279.82
Sector Mount [SM 201-3]	C	None		0.0000	169.00	No Ice	26.69	26.69	1083.00
						1/2" Ice	37.60	37.60	1489.60
						1" Ice	48.51	48.51	1896.20
(2) LPA-80080-4CF-EDIN-4	A	From Leg	4.00	0.0000	169.00	No Ice	2.62	5.40	12.00
			0.00			1/2" Ice	2.92	5.73	45.12
			0.00			1" Ice	3.23	6.06	82.72
(2) LPA-80080-4CF-EDIN-4	B	From Leg	4.00	0.0000	169.00	No Ice	2.62	5.40	12.00
			0.00			1/2" Ice	2.92	5.73	45.12
			0.00			1" Ice	3.23	6.06	82.72
(2) LPA-80080-4CF-EDIN-4	C	From Leg	4.00	0.0000	169.00	No Ice	2.62	5.40	12.00
			0.00			1/2" Ice	2.92	5.73	45.12
			0.00			1" Ice	3.23	6.06	82.72
LPA-70063/6CF-EDIN-2	A	From Leg	4.00	0.0000	169.00	No Ice	9.70	9.11	27.00
			0.00			1/2" Ice	10.17	9.57	104.55
			0.00			1" Ice	10.64	10.04	188.78
LPA-70063/6CF-EDIN-2	B	From Leg	4.00	0.0000	169.00	No Ice	9.70	9.11	27.00
			0.00			1/2" Ice	10.17	9.57	104.55
			0.00			1" Ice	10.64	10.04	188.78
LPA-70063/6CF-EDIN-2	C	From Leg	4.00	0.0000	169.00	No Ice	9.70	9.11	27.00
			0.00			1/2" Ice	10.17	9.57	104.55
			0.00			1" Ice	10.64	10.04	188.78
BXA-171085-8BF-EDIN-4	A	From Leg	4.00	0.0000	169.00	No Ice	2.92	2.14	9.20
			0.00			1/2" Ice	3.23	2.44	27.87
			0.00			1" Ice	3.54	2.75	50.52
BXA-171085-8BF-EDIN-4	B	From Leg	4.00	0.0000	169.00	No Ice	2.92	2.14	9.20
			0.00			1/2" Ice	3.23	2.44	27.87
			0.00			1" Ice	3.54	2.75	50.52
BXA-171085-8BF-EDIN-4	C	From Leg	4.00	0.0000	169.00	No Ice	2.92	2.14	9.20
			0.00			1/2" Ice	3.23	2.44	27.87
			0.00			1" Ice	3.54	2.75	50.52
DB222	C	From Leg	4.00	0.0000	169.00	No Ice	1.60	1.60	16.00
			0.00			1/2" Ice	2.88	2.88	20.80
			0.00			1" Ice	4.16	4.16	25.60
***									
Pipe Mount [PM 601-3]	C	None		0.0000	154.00	No Ice	4.39	4.39	195.00
						1/2" Ice	5.48	5.48	237.41
						1" Ice	6.57	6.57	279.82
Sector Mount [SM 409-3]	C	None		0.0000	154.00	No Ice	22.47	22.47	1034.77
						1/2" Ice	31.99	31.99	1500.50
						1" Ice	41.51	41.51	1966.23
6' x 2" Mount Pipe	A	From Leg	4.00	0.0000	154.00	No Ice	1.43	1.43	22.00
			0.00			1/2" Ice	1.92	1.92	32.83
			0.00			1" Ice	2.29	2.29	47.71
6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	154.00	No Ice	1.43	1.43	22.00
			0.00			1/2" Ice	1.92	1.92	32.83
			0.00			1" Ice	2.29	2.29	47.71
6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	154.00	No Ice	1.43	1.43	22.00
			0.00			1/2" Ice	1.92	1.92	32.83
			0.00			1" Ice	2.29	2.29	47.71
APXV9ERR18 w/ Mount Pipe	A	From Leg	4.00	0.0000	154.00	No Ice	8.26	7.50	87.55
			0.00			1/2" Ice	8.82	8.69	158.17

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	9.35	9.59	236.82
APXV9ERR18 w/ Mount Pipe	B	From Leg	4.00	0.0000	154.00	No Ice	8.26	7.50	87.55
			0.00			1/2" Ice	8.82	8.69	158.17
			0.00			1" Ice	9.35	9.59	236.82
APXV9ERR18 w/ Mount Pipe	C	From Leg	4.00	0.0000	154.00	No Ice	8.26	7.50	87.55
			0.00			1/2" Ice	8.82	8.69	158.17
			0.00			1" Ice	9.35	9.59	236.82
1900MHz RRH	A	From Leg	4.00	0.0000	154.00	No Ice	2.49	3.26	44.00
			0.00			1/2" Ice	2.70	3.48	75.27
			0.00			1" Ice	2.91	3.72	110.18
1900MHz RRH	B	From Leg	4.00	0.0000	154.00	No Ice	2.49	3.26	44.00
			0.00			1/2" Ice	2.70	3.48	75.27
			0.00			1" Ice	2.91	3.72	110.18
1900MHz RRH	C	From Leg	4.00	0.0000	154.00	No Ice	2.49	3.26	44.00
			0.00			1/2" Ice	2.70	3.48	75.27
			0.00			1" Ice	2.91	3.72	110.18
FD-RRH-2x50-800	A	From Leg	4.00	0.0000	154.00	No Ice	1.36	3.01	53.00
			0.00			1/2" Ice	1.52	3.22	76.83
			0.00			1" Ice	1.68	3.45	103.88
FD-RRH-2x50-800	B	From Leg	4.00	0.0000	154.00	No Ice	1.36	3.01	53.00
			0.00			1/2" Ice	1.52	3.22	76.83
			0.00			1" Ice	1.68	3.45	103.88
FD-RRH-2x50-800	C	From Leg	4.00	0.0000	154.00	No Ice	1.36	3.01	53.00
			0.00			1/2" Ice	1.52	3.22	76.83
			0.00			1" Ice	1.68	3.45	103.88
FD-RRH-2x50-800 W/FILTER	A	From Leg	4.00	0.0000	154.00	No Ice	2.06	1.93	64.00
			0.00			1/2" Ice	2.24	2.11	86.12
			0.00			1" Ice	2.43	2.29	111.30
FD-RRH-2x50-800 W/FILTER	B	From Leg	4.00	0.0000	154.00	No Ice	2.06	1.93	64.00
			0.00			1/2" Ice	2.24	2.11	86.12
			0.00			1" Ice	2.43	2.29	111.30
FD-RRH-2x50-800 W/FILTER	C	From Leg	4.00	0.0000	154.00	No Ice	2.06	1.93	64.00
			0.00			1/2" Ice	2.24	2.11	86.12
			0.00			1" Ice	2.43	2.29	111.30
TD-RRH8x20	A	From Leg	4.00	0.0000	154.00	No Ice	3.70	1.29	66.14
			0.00			1/2" Ice	3.95	1.46	90.08
			0.00			1" Ice	4.20	1.64	117.36
TD-RRH8x20	B	From Leg	4.00	0.0000	154.00	No Ice	3.70	1.29	66.14
			0.00			1/2" Ice	3.95	1.46	90.08
			0.00			1" Ice	4.20	1.64	117.36
TD-RRH8x20	C	From Leg	4.00	0.0000	154.00	No Ice	3.70	1.29	66.14
			0.00			1/2" Ice	3.95	1.46	90.08
			0.00			1" Ice	4.20	1.64	117.36
DT465B-2XR w/ Mount Pipe	A	From Leg	4.00	0.0000	154.00	No Ice	9.34	7.63	83.52
			0.00			1/2" Ice	9.91	8.82	160.00
			0.00			1" Ice	10.44	9.72	244.63
DT465B-2XR w/ Mount Pipe	B	From Leg	4.00	0.0000	154.00	No Ice	9.34	7.63	83.52
			0.00			1/2" Ice	9.91	8.82	160.00
			0.00			1" Ice	10.44	9.72	244.63
DT465B-2XR w/ Mount Pipe	C	From Leg	4.00	0.0000	154.00	No Ice	9.34	7.63	83.52
			0.00			1/2" Ice	9.91	8.82	160.00
			0.00			1" Ice	10.44	9.72	244.63
***									
Pipe Mount [PM 601-3]	C	None		0.0000	137.00	No Ice	4.39	4.39	195.00
						1/2" Ice	5.48	5.48	237.41
						1" Ice	6.57	6.57	279.82
Sector Mount [SM 406-3]	C	None		0.0000	137.00	No Ice	19.83	19.83	923.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
							1/2" Ice	29.41	29.41	1325.88
							1" Ice	38.99	38.99	1728.71
(2) RA21.7770.00 w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	137.00	No Ice	6.77	5.00	60.17
			0.00				1/2" Ice	7.26	5.96	114.15
			0.00				1" Ice	7.73	6.75	175.22
(2) RA21.7770.00 w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	137.00	No Ice	6.77	5.00	60.17
			0.00				1/2" Ice	7.26	5.96	114.15
			0.00				1" Ice	7.73	6.75	175.22
(2) RA21.7770.00 w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	137.00	No Ice	6.77	5.00	60.17
			0.00				1/2" Ice	7.26	5.96	114.15
			0.00				1" Ice	7.73	6.75	175.22
RRUS 11 B12	A	From Leg	4.00	0.00	0.0000	137.00	No Ice	2.83	1.18	50.70
			0.00				1/2" Ice	3.04	1.33	71.57
			0.00				1" Ice	3.26	1.48	95.49
RRUS 11 B12	B	From Leg	4.00	0.00	0.0000	137.00	No Ice	2.83	1.18	50.70
			0.00				1/2" Ice	3.04	1.33	71.57
			0.00				1" Ice	3.26	1.48	95.49
RRUS 11 B12	C	From Leg	4.00	0.00	0.0000	137.00	No Ice	2.83	1.18	50.70
			0.00				1/2" Ice	3.04	1.33	71.57
			0.00				1" Ice	3.26	1.48	95.49
(2) TT19-08BP111-001	A	From Leg	4.00	0.00	0.0000	137.00	No Ice	0.55	0.45	16.00
			0.00				1/2" Ice	0.65	0.53	21.80
			0.00				1" Ice	0.75	0.63	29.22
(2) TT19-08BP111-001	B	From Leg	4.00	0.00	0.0000	137.00	No Ice	0.55	0.45	16.00
			0.00				1/2" Ice	0.65	0.53	21.80
			0.00				1" Ice	0.75	0.63	29.22
(2) TT19-08BP111-001	C	From Leg	4.00	0.00	0.0000	137.00	No Ice	0.55	0.45	16.00
			0.00				1/2" Ice	0.65	0.53	21.80
			0.00				1" Ice	0.75	0.63	29.22
SBNHH-1D65A w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	137.00	No Ice	5.95	5.19	61.30
			0.00				1/2" Ice	6.39	5.96	114.32
			0.00				1" Ice	6.82	6.66	173.89
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	137.00	No Ice	9.90	8.11	76.55
			0.00				1/2" Ice	10.47	9.30	158.03
			0.00				1" Ice	11.01	10.21	247.79
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	137.00	No Ice	9.90	8.11	76.55
			0.00				1/2" Ice	10.47	9.30	158.03
			0.00				1" Ice	11.01	10.21	247.79
RRUS12/RRUS A2	A	From Leg	4.00	0.00	0.0000	137.00	No Ice	3.14	1.84	71.50
			0.00				1/2" Ice	3.36	2.01	98.98
			0.00				1" Ice	3.59	2.20	129.87
RRUS12/RRUS A2	B	From Leg	4.00	0.00	0.0000	137.00	No Ice	3.14	1.84	71.50
			0.00				1/2" Ice	3.36	2.01	98.98
			0.00				1" Ice	3.59	2.20	129.87
RRUS12/RRUS A2	C	From Leg	4.00	0.00	0.0000	137.00	No Ice	3.14	1.84	71.50
			0.00				1/2" Ice	3.36	2.01	98.98
			0.00				1" Ice	3.59	2.20	129.87
DC6-48-60-18-8F	C	From Leg	1.00	0.00	0.0000	137.00	No Ice	0.79	0.79	18.90
			0.00				1/2" Ice	1.27	1.27	34.02
			0.00				1" Ice	1.45	1.45	51.47
***										
Side Arm Mount [SO 203-3]	C	None			0.0000	125.00	No Ice	7.12	7.12	375.00
							1/2" Ice	9.88	9.88	460.64
							1" Ice	12.64	12.64	546.29
Sector Mount [SM 701-3]	C	None			0.0000	125.00	No Ice	19.73	19.73	825.00
							1/2" Ice	27.41	27.41	1165.99
							1" Ice	35.09	35.09	1506.98

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
6' x 2" Mount Pipe	A	From Leg	4.00	0.00	0.0000	125.00	No Ice	1.43	1.43	22.00
			0.00				1/2" Ice	1.92	1.92	32.83
			0.00				1" Ice	2.29	2.29	47.71
6' x 2" Mount Pipe	B	From Leg	4.00	0.00	0.0000	125.00	No Ice	1.43	1.43	22.00
			0.00				1/2" Ice	1.92	1.92	32.83
			0.00				1" Ice	2.29	2.29	47.71
6' x 2" Mount Pipe	C	From Leg	4.00	0.00	0.0000	125.00	No Ice	1.43	1.43	22.00
			0.00				1/2" Ice	1.92	1.92	32.83
			0.00				1" Ice	2.29	2.29	47.71
***										
Pirod 7' Side Arm Mount	B	From Leg	2.75	0.00	0.0000	120.00	No Ice	9.63	9.63	160.00
			0.00				1/2" Ice	11.56	11.56	190.00
			0.00				1" Ice	13.49	13.49	220.00
***										
Pirod 7' Side Arm Mount	A	From Leg	2.75	0.00	0.0000	106.00	No Ice	9.63	9.63	160.00
			0.00				1/2" Ice	11.56	11.56	190.00
			0.00				1" Ice	13.49	13.49	220.00
ANT150D3	A	From Leg	6.00	0.00	0.0000	106.00	No Ice	1.60	1.60	18.00
			0.00				1/2" Ice	2.88	2.88	23.40
			0.00				1" Ice	4.16	4.16	28.80
***										
Pirod 7' Side Arm Mount	B	From Leg	2.75	0.00	0.0000	99.00	No Ice	9.63	9.63	160.00
			0.00				1/2" Ice	11.56	11.56	190.00
			0.00				1" Ice	13.49	13.49	220.00
Pirod 7' Side Arm Mount	C	From Leg	2.75	0.00	0.0000	99.00	No Ice	9.63	9.63	160.00
			0.00				1/2" Ice	11.56	11.56	190.00
			0.00				1" Ice	13.49	13.49	220.00
PD458-2	C	From Leg	6.00	0.00	0.0000	99.00	No Ice	3.40	3.40	22.00
			0.00				1/2" Ice	4.79	4.79	47.24
			0.00				1" Ice	6.20	6.20	81.19
***										
7' Ice Shield	C	From Leg	0.00	0.00	0.0000	106.00	No Ice	5.97	2.59	461.00
			0.00				1/2" Ice	6.83	3.09	563.00
			0.00				1" Ice	7.71	3.61	676.00
Side Arm Mount [SO 601-1]	C	From Leg	0.00	0.00	0.0000	97.00	No Ice	1.22	6.30	158.70
			0.00				1/2" Ice	1.85	8.61	196.52
			0.00				1" Ice	2.48	10.92	234.34
Pipe Mount [PM 601-1]	C	From Leg	0.00	0.00	0.0000	97.00	No Ice	3.00	0.90	65.00
			0.00				1/2" Ice	3.74	1.12	79.14
			0.00				1" Ice	4.48	1.34	93.27
***										
Pirod 7' Side Arm Mount	A	From Leg	2.75	0.00	0.0000	79.00	No Ice	9.63	9.63	160.00
			0.00				1/2" Ice	11.56	11.56	190.00
			0.00				1" Ice	13.49	13.49	220.00
Pirod 7' Side Arm Mount	B	From Leg	2.75	0.00	0.0000	79.50	No Ice	9.63	9.63	160.00
			0.00				1/2" Ice	11.56	11.56	190.00
			0.00				1" Ice	13.49	13.49	220.00
Pirod 7' Side Arm Mount	C	From Leg	2.75	0.00	0.0000	79.50	No Ice	9.63	9.63	160.00
			0.00				1/2" Ice	11.56	11.56	190.00
			0.00				1" Ice	13.49	13.49	220.00
PD1142-2C	C	From Leg	6.00	0.00	0.0000	79.50	No Ice	0.14	0.14	10.00
			0.00				1/2" Ice	1.49	1.49	110.00
			0.00				1" Ice	2.84	2.84	210.00
BCD-80609	B	From Leg	6.00	0.00	0.0000	79.50	No Ice	2.95	2.95	26.50
			0.00				1/2" Ice	4.11	4.11	48.29
			0.00				1" Ice	5.29	5.29	77.42
3" Dia 20' Omni	B	From Leg	6.00	0.00	0.0000	79.50	No Ice	4.00	4.00	55.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1/2" Ice	6.00	6.00	100.00
			0.00			1" Ice	8.00	8.00	145.00
1-Element Dipole	B	From Leg	6.00	0.0000	79.50	No Ice	1.00	1.00	8.00
			0.00			1/2" Ice	1.50	1.50	12.00
			0.00			1" Ice	2.00	2.00	16.00
10' Dipole AF	A	From Leg	6.00	0.0000	79.00	No Ice	2.00	2.00	20.00
			0.00			1/2" Ice	3.02	3.02	35.50
			0.00			1" Ice	4.07	4.07	57.47
***									
Side Arm Mount [SO 304-1]	C	From Leg	1.50	0.0000	32.83	No Ice	0.63	0.94	23.00
			0.00			1/2" Ice	1.00	1.45	31.92
			0.00			1" Ice	1.37	1.96	40.83
GPS	C	From Leg	3.00	0.0000	32.83	No Ice	0.33	0.33	6.08
			0.00			1/2" Ice	0.48	0.48	11.71
			0.00			1" Ice	0.65	0.65	18.88

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
DA6-107AC	B	Paraboloid w/Radome	From Leg	2.00	30.0000		187.50	6.00	No Ice	28.30	440.00
				0.00					1/2" Ice	29.05	589.13
				2.00					1" Ice	29.80	738.25
DA6-107AC	C	Paraboloid w/Radome	From Leg	2.00	30.0000		97.00	6.00	No Ice	28.30	440.00
				0.00					1/2" Ice	29.05	589.13
				2.00					1" Ice	29.80	738.25

Truss-Leg Properties

Section Designation	Area in^2	Area Ice in^2	Self Weight lb	Ice Weight lb	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in^2
Pirod 105217	2130.7479	7141.9407	619.35	2586.20	7.3984	24.7984	5.3014
Pirod 105217	2130.7479	7133.6677	619.35	2581.00	7.3984	24.7697	5.3014
Pirod 105217	2130.7479	7115.9803	619.35	2569.90	7.3984	24.7083	5.3014
Pirod 105217	2130.7479	7096.8281	619.35	2557.90	7.3984	24.6418	5.3014
Pirod 105217	2130.7479	7083.1102	619.35	2549.32	7.3984	24.5941	5.3014
Pirod 105218	2263.4687	7132.8454	754.52	2581.83	7.8593	24.7668	7.2158
Pirod 105218	2263.4687	7108.1359	754.52	2566.26	7.8593	24.6810	7.2158
Pirod 105218	2263.4687	7089.9961	754.52	2554.86	7.8593	24.6180	7.2158
Pirod 105219	2441.8688	7131.6326	944.27	2580.20	8.4787	24.7626	9.4248
Pirod 105219	2441.8688	7083.1231	944.27	2549.57	8.4787	24.5942	9.4248
Pirod 105220	2578.8005	7092.0558	1121.16	2552.05	8.9542	24.6252	11.9282
Pirod 105220	2578.8005	7000.2743	1121.16	2494.23	8.9542	24.3065	11.9282

Section Designation	Area	Area Ice	Self Weight	Ice Weight	Equiv. Diameter	Equiv. Diameter Ice	Leg Area
	in^2	in^2	lb	lb	in	in	in^2
Pirod 112738	3466.5160	8985.6471	1689.34	4341.03	12.0365	31.2002	14.7262

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	194.833 - 190	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	33	-961.51	-642.70	0.06
			Max. Mx	33	-961.51	-642.70	0.06
			Max. My	2	-201.83	-367.37	458.81
			Max. Vy	22	182.83	-588.84	53.81
			Max. Vx	2	-152.71	0.00	-0.00
		Diagonal	Max Tension	3	66.43	0.00	0.00
			Max. Compression	27	-430.80	0.00	0.00
			Max. Mx	38	-227.58	154.90	0.00
			Max. My	2	-16.89	0.00	-0.17
			Max. Vy	38	84.63	0.00	0.00
			Max. Vx	2	0.10	0.00	0.00
		Top Girt	Max Tension	2	177.26	0.00	0.00
			Max. Compression	3	-132.93	-23.22	0.82
			Max. Mx	37	29.69	-111.69	1.99
			Max. My	27	89.97	-108.54	-2.29
			Max. Vy	37	104.79	-111.69	1.99
			Max. Vx	27	0.54	0.00	0.00
T2	190 - 180	Leg	Max Tension	23	782.41	-554.96	53.79
			Max. Compression	31	-6363.64	691.37	6.03
			Max. Mx	22	670.94	1002.56	53.81
			Max. My	4	-1750.48	145.11	1131.30
			Max. Vy	22	-625.83	-588.84	53.81
			Max. Vx	4	-657.08	-143.58	408.66
		Diagonal	Max Tension	24	1404.43	0.00	0.00
			Max. Compression	2	-1592.05	0.00	0.00
			Max. Mx	27	258.57	109.43	1.05
			Max. My	4	-435.60	20.51	-2.31
			Max. Vy	33	-72.63	109.39	-0.35
			Max. Vx	4	-0.35	0.00	0.00
T3	180 - 160	Leg	Max Tension	23	10411.72	-363.73	-13.58
			Max. Compression	31	-15974.96	313.94	1.32
			Max. Mx	2	-15222.45	924.91	-59.99
			Max. My	4	-2998.38	38.03	-1147.18
			Max. Vy	6	-887.17	-400.29	25.07
			Max. Vx	24	865.71	-144.53	270.71
		Diagonal	Max Tension	24	4012.15	0.00	0.00
			Max. Compression	2	-4149.07	0.00	0.00
			Max. Mx	31	713.19	129.75	-0.73
			Max. My	4	-1113.67	22.70	-3.55
			Max. Vy	31	-82.65	129.75	-0.73
			Max. Vx	4	-0.52	0.00	0.00
T4	160 - 150	Leg	Max Tension	23	19595.49	-819.58	-7.31
			Max. Compression	2	-27474.51	-973.69	9.34
			Max. Mx	31	-20830.63	2446.59	2.62
			Max. My	25	-3417.46	-413.32	2350.92
			Max. Vy	2	1549.99	2400.06	-2.32
			Max. Vx	20	819.08	-560.90	-2299.77
		Diagonal	Max Tension	25	6030.06	31.73	-6.73
			Max. Compression	24	-6221.04	0.00	0.00
			Max. Mx	30	1346.32	141.50	1.93
			Max. My	2	-5888.63	21.49	-9.19
			Max. Vy	30	-91.73	141.50	1.93
			Max. Vx	2	-1.28	21.49	-9.19
		Secondary	Max Tension	10	1117.45	10.88	-5.23

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Horizontal					
			Max. Compression	23	-808.07	38.81	5.63
			Max. Mx	38	-234.87	97.53	-0.79
			Max. My	30	893.26	87.66	-6.37
			Max. Vy	38	-99.51	97.53	-0.79
			Max. Vx	37	1.25	0.00	0.00
T5	150 - 140	Leg	Max Tension	23	32653.45	3.48	-26.07
			Max. Compression	2	-42701.42	3256.55	-27.70
			Max. Mx	2	-42701.42	3256.55	-27.70
			Max. My	25	-3555.12	-413.32	2350.92
			Max. Vy	2	-555.06	3256.55	-27.70
			Max. Vx	20	-312.91	-560.89	-2299.76
		Diagonal	Max Tension	25	6918.65	0.00	0.00
			Max. Compression	2	-7361.02	0.00	0.00
			Max. Mx	31	701.00	163.33	-0.06
			Max. My	2	-6627.63	31.77	-7.71
			Max. Vy	31	-94.20	163.33	-0.06
			Max. Vx	2	1.08	0.00	0.00
T6	140 - 120	Leg	Max Tension	23	61160.55	-2204.91	-8.91
			Max. Compression	2	-77653.55	802.00	32.19
			Max. Mx	2	-59029.16	3256.54	-27.59
			Max. My	24	-6853.02	-353.51	3198.71
			Max. Vy	10	886.25	3237.54	27.53
			Max. Vx	20	662.21	-344.83	-3133.13
		Diagonal	Max Tension	24	7247.45	0.00	0.00
			Max. Compression	24	-7280.61	0.00	0.00
			Max. Mx	27	1714.48	176.82	23.41
			Max. My	27	259.93	163.43	-25.23
			Max. Vy	37	105.36	174.50	24.76
			Max. Vx	27	-6.23	0.00	0.00
		Top Girt	Max Tension	22	875.29	0.00	0.00
			Max. Compression	3	-689.40	0.00	0.00
			Max. Mx	26	565.90	-467.67	0.00
			Max. My	26	546.89	0.00	13.50
			Max. Vy	26	170.06	0.00	0.00
			Max. Vx	26	-4.91	0.00	0.00
T7	120 - 110	Leg	Max Tension	23	74650.98	-889.34	-32.66
			Max. Compression	2	-93122.27	16.67	21.61
			Max. Mx	2	-92934.65	6033.33	15.20
			Max. My	20	-10053.36	-412.23	-2917.18
			Max. Vy	2	1223.63	6033.33	15.23
			Max. Vx	4	-621.08	-63.12	-1865.41
		Diagonal	Max Tension	25	7605.59	83.44	-0.51
			Max. Compression	24	-8110.55	0.00	0.00
			Max. Mx	27	1009.75	219.15	-26.23
			Max. My	38	-2808.08	186.01	-27.83
			Max. Vy	29	125.29	208.75	-24.84
			Max. Vx	29	-6.85	0.00	0.00
		Secondary Horizontal	Max Tension	2	1614.94	0.00	0.00
			Max. Compression	2	-1614.94	33.10	-0.91
			Max. Mx	32	-300.36	143.98	24.29
			Max. My	28	328.07	143.15	26.66
			Max. Vy	32	-107.77	143.98	24.29
			Max. Vx	38	-6.53	0.00	0.00
T8	110 - 100	Leg	Max Tension	23	88819.15	-680.28	-84.24
			Max. Compression	2	-110372.60	2709.27	-2.87
			Max. Mx	10	-109083.38	2734.33	114.49
			Max. My	20	-10688.87	-412.24	-2917.18
			Max. Vy	10	-457.73	2734.33	114.49
			Max. Vx	8	412.12	-380.79	2904.02

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Diagonal	Max Tension	24	7587.54	0.00	0.00
			Max. Compression	24	-7701.53	0.00	0.00
			Max. Mx	27	1617.94	250.12	31.22
			Max. My	36	-717.14	223.16	-33.88
			Max. Vy	37	133.97	239.72	32.55
			Max. Vx	27	-7.56	0.00	0.00
T9	100 - 80	Leg	Max Tension	23	116884.36	-2138.11	93.48
			Max. Compression	2	-143037.20	3496.54	5.96
			Max. Mx	10	-142059.21	3502.82	52.38
			Max. My	20	-13474.31	30.30	-2831.24
			Max. Vy	6	-689.96	-2467.62	133.23
			Max. Vx	12	-873.25	19.20	-2006.92
		Diagonal	Max Tension	8	8099.35	0.00	0.00
			Max. Compression	8	-8272.63	0.00	0.00
			Max. Mx	27	1785.42	307.66	-38.89
			Max. My	27	165.45	285.44	42.04
			Max. Vy	37	156.50	306.18	-40.53
			Max. Vx	27	8.53	0.00	0.00
T10	80 - 60	Leg	Max Tension	23	144296.19	-2126.96	-24.51
			Max. Compression	2	-176369.67	3158.43	-10.64
			Max. Mx	10	-158216.56	3502.81	52.38
			Max. My	20	-14889.70	-61.16	-2927.29
			Max. Vy	22	-617.21	-3310.53	-54.44
			Max. Vx	4	-543.33	12.77	-2677.13
		Diagonal	Max Tension	8	8782.79	0.00	0.00
			Max. Compression	8	-8929.37	0.00	0.00
			Max. Mx	27	1977.99	427.63	-52.31
			Max. My	27	252.58	393.02	54.58
			Max. Vy	37	194.64	417.31	54.10
			Max. Vx	27	10.22	0.00	0.00
T11	60 - 40	Leg	Max Tension	23	170495.97	-2538.02	-18.40
			Max. Compression	2	-209361.82	1222.43	-11.36
			Max. Mx	2	-192865.12	3272.60	-4.45
			Max. My	20	-19265.13	-870.30	-5261.47
			Max. Vy	10	327.77	3266.74	25.19
			Max. Vx	20	479.36	-870.30	-5261.47
		Diagonal	Max Tension	24	9332.20	0.00	0.00
			Max. Compression	24	-9354.00	0.00	0.00
			Max. Mx	27	1927.92	612.01	72.29
			Max. My	38	-959.96	551.38	75.78
			Max. Vy	37	254.13	589.77	-73.76
			Max. Vx	38	13.07	0.00	0.00
T12	40 - 20	Leg	Max Tension	23	196517.14	-3141.89	-0.05
			Max. Compression	2	-243204.70	3104.92	-31.12
			Max. Mx	22	191102.52	-5860.20	-86.53
			Max. My	20	-22810.14	-1532.80	-14027.60
			Max. Vy	33	-759.67	-3790.82	20.82
			Max. Vx	20	1943.75	-1532.80	-14027.60
		Diagonal	Max Tension	18	11044.65	0.00	0.00
			Max. Compression	10	-10848.79	0.00	0.00
			Max. Mx	38	-1956.59	723.14	-85.02
			Max. My	37	-3055.47	669.06	97.16
			Max. Vy	38	272.34	723.14	-85.02
			Max. Vx	37	-14.55	0.00	0.00
T13	20 - 0	Leg	Max Tension	23	209611.92	-5476.39	-87.07
			Max. Compression	2	-258653.56	0.00	0.10
			Max. Mx	22	204823.67	-5860.20	-86.53
			Max. My	20	-22039.36	-1532.85	-14027.59
			Max. Vy	14	-598.76	-5810.35	30.76
			Max. Vx	20	-979.33	-1532.85	-14027.59
		Diagonal	Max Tension	23	13905.66	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	10	-17090.39	0.00	0.00
			Max. Mx	38	4409.91	-1022.24	-152.36
			Max. My	27	3151.23	-1018.14	-155.07
			Max. Vy	38	-328.42	-1022.24	-152.36
			Max. Vx	27	-19.57	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	18	276782.70	32035.73	-18871.51
	Max. H_x	18	276782.70	32035.73	-18871.51
	Max. H_z	7	-220180.57	-25588.15	14968.00
	Min. Vert	7	-220180.57	-25588.15	14968.00
	Min. H_x	7	-220180.57	-25588.15	14968.00
	Min. H_z	18	276782.70	32035.73	-18871.51
Leg B	Max. Vert	10	279440.60	-32389.03	-18948.99
	Max. H_x	23	-224343.80	25821.79	15169.89
	Max. H_z	23	-224343.80	25821.79	15169.89
	Min. Vert	23	-224343.80	25821.79	15169.89
	Min. H_x	10	279440.60	-32389.03	-18948.99
	Min. H_z	10	279440.60	-32389.03	-18948.99
Leg A	Max. Vert	2	279840.42	-17.56	37424.09
	Max. H_x	8	24609.87	292.25	3151.85
	Max. H_z	2	279840.42	-17.56	37424.09
	Min. Vert	15	-219812.82	33.22	-29518.55
	Min. H_x	22	146160.56	-323.14	19312.95
	Min. H_z	15	-219812.82	33.22	-29518.55

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	61395.24	-0.00	0.00	-4512.67	7701.81	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	73674.29	31.09	-50604.62	-5527024.48	13003.48	411.50
0.9 Dead+1.6 Wind 0 deg - No Ice	55255.72	31.09	-50604.79	-5520755.84	10670.22	418.22
1.2 Dead+1.6 Wind 30 deg - No Ice	73674.29	23519.93	-40746.32	-4490874.79	-2569332.68	-5153.83
0.9 Dead+1.6 Wind 30 deg - No Ice	55255.72	23520.00	-40746.45	-4485518.72	-2569374.78	-5137.98
1.2 Dead+1.6 Wind 60 deg - No Ice	73674.29	40866.45	-23641.68	-2601694.79	-4466652.14	-8211.49
0.9 Dead+1.6 Wind 60 deg - No Ice	55255.72	40866.58	-23641.75	-2598031.80	-4465004.08	-8208.83
1.2 Dead+1.6 Wind 90 deg - No Ice	73674.29	47096.63	25.08	-1120.83	-5155833.06	-10058.06
0.9 Dead+1.6 Wind 90 deg - No Ice	55255.72	47096.79	25.08	228.87	-5153558.99	-10057.26
1.2 Dead+1.6 Wind 120 deg -	73674.29	44028.18	25409.41	2759550.08	-4778835.66	-9512.18

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
No Ice						
0.9 Dead+1.6 Wind 120 deg - No Ice	55255.72	44028.33	25409.49	2758449.88	-4776913.81	-9515.61
1.2 Dead+1.6 Wind 150 deg - No Ice	73674.29	23733.05	40789.16	4487715.91	-2609091.92	-4040.18
0.9 Dead+1.6 Wind 150 deg - No Ice	55255.72	23733.13	40789.29	4485050.40	-2609074.50	-4047.68
1.2 Dead+1.6 Wind 180 deg - No Ice	73674.29	188.87	46984.97	5161113.01	-16072.51	1498.91
0.9 Dead+1.6 Wind 180 deg - No Ice	55255.72	188.87	46985.12	5157860.82	-18372.04	1492.50
1.2 Dead+1.6 Wind 210 deg - No Ice	73674.29	-23302.47	40334.29	4413222.62	2565867.17	7067.96
0.9 Dead+1.6 Wind 210 deg - No Ice	55255.72	-23302.54	40334.42	4410654.44	2561262.10	7052.61
1.2 Dead+1.6 Wind 240 deg - No Ice	73674.29	-43694.49	24982.45	2689526.76	4752816.10	12316.82
0.9 Dead+1.6 Wind 240 deg - No Ice	55255.72	-43694.63	24982.53	2688503.21	4746289.34	12313.58
1.2 Dead+1.6 Wind 270 deg - No Ice	73674.29	-47201.29	-163.06	-35987.45	5207427.23	11703.00
0.9 Dead+1.6 Wind 270 deg - No Ice	55255.72	-47201.45	-163.06	-34597.50	5200459.69	11702.46
1.2 Dead+1.6 Wind 300 deg - No Ice	73674.29	-41151.93	-23754.39	-2632770.55	4557558.55	9870.18
0.9 Dead+1.6 Wind 300 deg - No Ice	55255.72	-41152.06	-23754.47	-2629065.76	4551167.44	9873.68
1.2 Dead+1.6 Wind 330 deg - No Ice	73674.29	-23602.81	-40804.52	-4513114.90	2622200.17	6257.28
0.9 Dead+1.6 Wind 330 deg - No Ice	55255.72	-23602.89	-40804.66	-4507726.38	2617544.43	6252.24
1.2 Dead+1.0 Ice+1.0 Temp	240813.03	0.11	0.25	-70291.02	35486.45	-0.60
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	240813.03	-10.20	-11805.66	-1418882.30	38539.98	-1135.97
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	240813.03	5704.46	-9899.02	-1206589.30	-617202.53	-1254.94
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	240813.03	9927.44	-5731.55	-726925.60	-1099926.71	-901.87
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	240813.03	11442.09	18.07	-68059.63	-1275050.25	-274.90
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	240813.03	10257.13	5930.46	605664.75	-1133752.37	449.20
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	240813.03	5759.89	9919.63	1068246.56	-626559.96	1044.83
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	240813.03	41.25	11446.17	1241473.94	30149.01	1391.02
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	240813.03	-5673.74	9840.57	1055437.35	685824.37	1525.94
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	240813.03	-10195.38	5844.74	591958.20	1197028.56	1305.33
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	240813.03	-11457.11	-37.69	-77284.34	1351595.02	507.70
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	240813.03	-9982.74	-5772.82	-735060.19	1184248.07	-205.52
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	240813.03	-5741.58	-9921.93	-1211916.64	697584.57	-730.97
Dead+Wind 0 deg - Service	61395.24	8.83	-14374.52	-1572037.90	8782.62	118.14
Dead+Wind 30 deg - Service	61395.24	6680.97	-11574.22	-1277856.41	-724295.83	-1456.81
Dead+Wind 60 deg - Service	61395.24	11608.35	-6715.56	-741566.34	-1262944.34	-2331.97
Dead+Wind 90 deg - Service	61395.24	13378.07	7.12	-3287.59	-1458560.12	-2863.57
Dead+Wind 120 deg - Service	61395.24	12506.45	7217.68	780435.60	-1351572.24	-2703.33

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 150 deg - Service	61395.24	6741.50	11586.39	1271005.86	-735586.08	-1142.61
Dead+Wind 180 deg - Service	61395.24	53.65	13346.35	1462205.85	528.49	424.66
Dead+Wind 210 deg - Service	61395.24	-6619.19	11457.19	1249861.48	733497.85	2000.72
Dead+Wind 240 deg - Service	61395.24	-12411.66	7096.40	760559.31	1354366.29	3498.76
Dead+Wind 270 deg - Service	61395.24	-13407.80	-46.32	-13191.26	1483419.86	3328.69
Dead+Wind 300 deg - Service	61395.24	-11689.44	-6747.57	-750384.14	1298927.90	2804.53
Dead+Wind 330 deg - Service	61395.24	-6704.52	-11590.75	-1284165.47	749482.50	1772.27

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	lb	lb	lb	lb	lb	lb	
1	-0.00	-61395.24	-0.00	0.00	61395.24	-0.00	0.000%
2	31.09	-73674.29	-50605.23	-31.09	73674.29	50604.62	0.001%
3	31.09	-55255.72	-50605.23	-31.09	55255.72	50604.79	0.001%
4	23520.25	-73674.29	-40746.83	-23519.93	73674.29	40746.32	0.001%
5	23520.25	-55255.72	-40746.83	-23520.00	55255.72	40746.45	0.001%
6	40866.99	-73674.29	-23641.99	-40866.45	73674.29	23641.68	0.001%
7	40866.99	-55255.72	-23641.99	-40866.58	55255.72	23641.75	0.001%
8	47097.23	-73674.29	25.05	-47096.63	73674.29	-25.08	0.001%
9	47097.23	-55255.72	25.05	-47096.79	55255.72	-25.08	0.001%
10	44028.71	-73674.29	25409.71	-44028.18	73674.29	-25409.41	0.001%
11	44028.71	-55255.72	25409.71	-44028.33	55255.72	-25409.49	0.001%
12	23733.33	-73674.29	40789.70	-23733.05	73674.29	-40789.16	0.001%
13	23733.33	-55255.72	40789.70	-23733.13	55255.72	-40789.29	0.001%
14	188.87	-73674.29	46985.60	-188.87	73674.29	-46984.97	0.001%
15	188.87	-55255.72	46985.60	-188.87	55255.72	-46985.12	0.001%
16	-23302.74	-73674.29	40334.82	23302.47	73674.29	-40334.29	0.001%
17	-23302.74	-55255.72	40334.82	23302.54	55255.72	-40334.42	0.001%
18	-43695.00	-73674.29	24982.74	43694.49	73674.29	-24982.45	0.001%
19	-43695.00	-55255.72	24982.74	43694.63	55255.72	-24982.53	0.001%
20	-47201.90	-73674.29	-163.10	47201.29	73674.29	163.06	0.001%
21	-47201.90	-55255.72	-163.10	47201.45	55255.72	163.06	0.001%
22	-41152.49	-73674.29	-23754.71	41151.93	73674.29	23754.39	0.001%
23	-41152.49	-55255.72	-23754.71	41152.06	55255.72	23754.47	0.001%
24	-23603.15	-73674.29	-40805.03	23602.81	73674.29	40804.52	0.001%
25	-23603.15	-55255.72	-40805.03	23602.89	55255.72	40804.66	0.001%
26	-0.00	-240813.03	-0.00	-0.11	240813.03	-0.25	0.000%
27	-10.20	-240813.03	-11805.78	10.20	240813.03	11805.66	0.000%
28	5704.52	-240813.03	-9899.12	-5704.46	240813.03	9899.02	0.000%
29	9927.53	-240813.03	-5731.61	-9927.44	240813.03	5731.55	0.000%
30	11442.20	-240813.03	18.07	-11442.09	240813.03	-18.07	0.000%
31	10257.23	-240813.03	5930.51	-10257.13	240813.03	-5930.46	0.000%
32	5759.94	-240813.03	9919.72	-5759.89	240813.03	-9919.63	0.000%
33	41.25	-240813.03	11446.27	-41.25	240813.03	-11446.17	0.000%
34	-5673.80	-240813.03	9840.66	5673.74	240813.03	-9840.57	0.000%
35	-10195.48	-240813.03	5844.79	10195.38	240813.03	-5844.74	0.000%
36	-11457.23	-240813.03	-37.70	11457.11	240813.03	37.69	0.000%
37	-9982.84	-240813.03	-5772.88	9982.74	240813.03	5772.82	0.000%
38	-5741.64	-240813.03	-9922.03	5741.58	240813.03	9921.93	0.000%
39	8.83	-61395.24	-14374.67	-8.83	61395.24	14374.52	0.000%
40	6681.05	-61395.24	-11574.34	-6680.97	61395.24	11574.22	0.000%
41	11608.47	-61395.24	-6715.63	-11608.35	61395.24	6715.56	0.000%
42	13378.21	-61395.24	7.12	-13378.07	61395.24	-7.12	0.000%
43	12506.58	-61395.24	7217.76	-12506.45	61395.24	-7217.68	0.000%
44	6741.57	-61395.24	11586.52	-6741.50	61395.24	-11586.39	0.000%
45	53.65	-61395.24	13346.50	-53.65	61395.24	-13346.35	0.000%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
46	-6619.26	-61395.24	11457.31	6619.19	61395.24	-11457.19	0.000%
47	-12411.79	-61395.24	7096.47	12411.66	61395.24	-7096.40	0.000%
48	-13407.94	-61395.24	-46.33	13407.80	61395.24	46.32	0.000%
49	-11689.57	-61395.24	-6747.65	11689.44	61395.24	6747.57	0.000%
50	-6704.59	-61395.24	-11590.88	6704.52	61395.24	11590.75	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	8	0.00000001	0.00008365
3	Yes	8	0.00000001	0.00006128
4	Yes	8	0.00000001	0.00008874
5	Yes	8	0.00000001	0.00006637
6	Yes	8	0.00000001	0.00009334
7	Yes	8	0.00000001	0.00007089
8	Yes	8	0.00000001	0.00008874
9	Yes	8	0.00000001	0.00006639
10	Yes	8	0.00000001	0.00008358
11	Yes	8	0.00000001	0.00006122
12	Yes	8	0.00000001	0.00008889
13	Yes	8	0.00000001	0.00006648
14	Yes	8	0.00000001	0.00009352
15	Yes	8	0.00000001	0.00007102
16	Yes	8	0.00000001	0.00008871
17	Yes	8	0.00000001	0.00006636
18	Yes	8	0.00000001	0.00008355
19	Yes	8	0.00000001	0.00006123
20	Yes	8	0.00000001	0.00008896
21	Yes	8	0.00000001	0.00006659
22	Yes	8	0.00000001	0.00009369
23	Yes	8	0.00000001	0.00007116
24	Yes	8	0.00000001	0.00008902
25	Yes	8	0.00000001	0.00006662
26	Yes	6	0.00000001	0.00003825
27	Yes	9	0.00000001	0.00003891
28	Yes	9	0.00000001	0.00003780
29	Yes	9	0.00000001	0.00003720
30	Yes	9	0.00000001	0.00003632
31	Yes	9	0.00000001	0.00003641
32	Yes	9	0.00000001	0.00003581
33	Yes	9	0.00000001	0.00003603
34	Yes	9	0.00000001	0.00003611
35	Yes	9	0.00000001	0.00003740
36	Yes	9	0.00000001	0.00003806
37	Yes	9	0.00000001	0.00003902
38	Yes	9	0.00000001	0.00003885
39	Yes	8	0.00000001	0.00006787
40	Yes	8	0.00000001	0.00006860
41	Yes	8	0.00000001	0.00006976
42	Yes	8	0.00000001	0.00006855
43	Yes	8	0.00000001	0.00006784
44	Yes	8	0.00000001	0.00006882
45	Yes	8	0.00000001	0.00006997
46	Yes	8	0.00000001	0.00006849

47	Yes	8	0.00000001	0.00006764
48	Yes	8	0.00000001	0.00006878
49	Yes	8	0.00000001	0.00007017
50	Yes	8	0.00000001	0.00006886

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	194.833 - 190	3.007	39	0.1188	0.0068
T2	190 - 180	2.888	39	0.1188	0.0067
T3	180 - 160	2.637	39	0.1184	0.0055
T4	160 - 150	2.132	39	0.1155	0.0033
T5	150 - 140	1.885	39	0.1118	0.0028
T6	140 - 120	1.649	39	0.1055	0.0023
T7	120 - 110	1.215	39	0.0924	0.0015
T8	110 - 100	1.021	39	0.0843	0.0012
T9	100 - 80	0.845	39	0.0753	0.0012
T10	80 - 60	0.538	39	0.0601	0.0009
T11	60 - 40	0.305	39	0.0430	0.0008
T12	40 - 20	0.140	39	0.0283	0.0006
T13	20 - 0	0.034	39	0.0127	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
189.50	DA6-107AC	39	2.875	0.1188	0.0067	198574
187.50	Pipe Mount [PM 602-1]	39	2.825	0.1188	0.0065	201775
183.67	Pirod 7' Side Arm Mount	39	2.729	0.1186	0.0060	308609
183.00	ANT150F2	39	2.712	0.1186	0.0059	342741
169.00	Pipe Mount [PM 601-3]	39	2.358	0.1173	0.0041	508900
154.00	Pipe Mount [PM 601-3]	39	1.983	0.1136	0.0029	131309
137.00	Pipe Mount [PM 601-3]	39	1.581	0.1036	0.0022	99413
125.00	Side Arm Mount [SO 203-3]	39	1.318	0.0959	0.0017	79706
120.00	Pirod 7' Side Arm Mount	39	1.215	0.0924	0.0015	73341
106.00	Pirod 7' Side Arm Mount	39	0.948	0.0807	0.0012	70557
99.00	DA6-107AC	39	0.828	0.0744	0.0011	84936
97.00	Side Arm Mount [SO 601-1]	39	0.795	0.0728	0.0011	83460
79.50	Pirod 7' Side Arm Mount	39	0.532	0.0597	0.0009	63119
79.00	Pirod 7' Side Arm Mount	39	0.525	0.0593	0.0009	63006
32.83	Side Arm Mount [SO 304-1]	39	0.094	0.0227	0.0004	74681

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	194.833 - 190	10.604	2	0.4184	0.0240

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T2	190 - 180	10.181	2	0.4184	0.0237
T3	180 - 160	9.294	2	0.4178	0.0193
T4	160 - 150	7.512	2	0.4076	0.0117
T5	150 - 140	6.643	2	0.3941	0.0097
T6	140 - 120	5.811	2	0.3721	0.0081
T7	120 - 110	4.279	2	0.3259	0.0052
T8	110 - 100	3.594	2	0.2972	0.0043
T9	100 - 80	2.973	2	0.2654	0.0041
T10	80 - 60	1.895	2	0.2119	0.0033
T11	60 - 40	1.072	2	0.1513	0.0028
T12	40 - 20	0.492	10	0.0996	0.0020
T13	20 - 0	0.119	10	0.0447	0.0008

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
189.50	DA6-107AC	2	10.137	0.4184	0.0236	58444
187.50	Pipe Mount [PM 602-1]	2	9.961	0.4183	0.0230	59877
183.67	Pirod 7' Side Arm Mount	2	9.621	0.4182	0.0213	95234
183.00	ANT150F2	2	9.562	0.4182	0.0209	107077
169.00	Pipe Mount [PM 601-3]	2	8.311	0.4142	0.0144	165886
154.00	Pipe Mount [PM 601-3]	2	6.987	0.4006	0.0103	38264
137.00	Pipe Mount [PM 601-3]	2	5.569	0.3652	0.0076	28188
125.00	Side Arm Mount [SO 203-3]	2	4.643	0.3382	0.0059	22606
120.00	Pirod 7' Side Arm Mount	2	4.279	0.3259	0.0052	20817
106.00	Pirod 7' Side Arm Mount	2	3.339	0.2844	0.0043	20014
99.00	DA6-107AC	2	2.914	0.2625	0.0040	24003
97.00	Side Arm Mount [SO 601-1]	2	2.797	0.2567	0.0039	23583
79.50	Pirod 7' Side Arm Mount	2	1.871	0.2104	0.0033	17856
79.00	Pirod 7' Side Arm Mount	2	1.847	0.2090	0.0032	17823
32.83	Side Arm Mount [SO 304-1]	10	0.330	0.0799	0.0016	21223

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	194.833	Leg	A325N	1.0000	6	53.42	53014.40	0.001	1	Bolt Tension
		Diagonal	A325N	1.0000	1	430.80	41760.00	0.010	1	Member Bearing
T2	190	Leg	A325N	1.0000	6	353.54	53014.40	0.007	1	Bolt Tension
		Diagonal	A325N	1.0000	1	1404.43	9144.14	0.154	1	Member Block Shear
T3	180	Leg	A325N	1.0000	6	1735.29	53014.40	0.033	1	Bolt Tension
		Diagonal	A325N	1.0000	1	4012.15	10163.70	0.395	1	Member Block Shear
T4	160	Leg	A325N	1.0000	6	3241.99	53014.40	0.061	1	Bolt Tension
		Diagonal	A325N	1.0000	1	6030.06	16939.50	0.356	1	Member Block Shear
		Secondary	A325N	0.5000	2	558.73	7952.16	0.070	1	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T5	150	Horizontal Diagonal	A325N	1.0000	1	6918.65	16939.50	0.408	1	Member Block Shear
T6	140	Leg	A325N	1.0000	6	10193.40	53014.40	0.192	1	Bolt Tension
		Diagonal	A325N	1.0000	1	7247.45	16939.50	0.428	1	Member Block Shear
		Top Girt	A325N	1.0000	1	875.28	24405.50	0.036	1	Member Block Shear
T7	120	Leg	A325N	1.0000	6	12368.70	53014.40	0.233	1	Bolt Tension
		Diagonal	A325N	1.0000	1	7605.59	20337.90	0.374	1	Member Block Shear
		Secondary Horizontal	A325N	0.5000	1	1614.94	7952.16	0.203	1	Bolt Shear
T8	110	Diagonal	A325N	1.0000	1	7587.54	20337.90	0.373	1	Member Block Shear
T9	100	Leg	A325N	1.2500	6	19480.70	82835.00	0.235	1	Bolt Tension
		Diagonal	A325N	1.2500	1	8099.35	16429.70	0.493	1	Member Block Shear
T10	80	Leg	A325N	1.2500	6	24049.40	82835.00	0.290	1	Bolt Tension
		Diagonal	A325N	1.2500	1	8782.79	24644.50	0.356	1	Member Block Shear
T11	60	Leg	A325N	1.2500	6	28416.00	82835.00	0.343	1	Bolt Tension
		Diagonal	A325N	1.2500	1	9332.20	31972.50	0.292	1	Member Bearing
T12	40	Leg	A325N	1.2500	6	32752.90	82835.00	0.395	1	Bolt Tension
		Diagonal	A325N	1.2500	1	11044.70	31972.50	0.345	1	Member Bearing
T13	20	Leg	A325N	2.0000	6	34935.30	212058.00	0.165	1	Bolt Tension
		Diagonal	A325N	1.0000	2	6952.83	42630.50	0.163	1	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	194.833 - 190	Pirod 105217	4.83	4.83	37.8 K=1.00	5.3014	-961.51	214859.00	0.004 [1]
T2	190 - 180	Pirod 105217	10.00	10.00	37.8 K=1.00	5.3014	-6363.64	214859.00	0.030 [1]
T3	180 - 160	Pirod 105217	20.00	10.00	37.8 K=1.00	5.3014	-15975.00	214859.00	0.074 [1]
T4	160 - 150	Pirod 105217	10.00	5.00	37.8 K=1.00	5.3014	-27474.50	214859.00	0.128 [1]
T5	150 - 140	Pirod 105217	10.00	10.00	37.8 K=1.00	5.3014	-42701.40	214859.00	0.199 [1]
T6	140 - 120	Pirod 105218	20.03	10.02	32.4 K=1.00	7.2158	-77653.60	300681.00	0.258 [1]
T7	120 - 110	Pirod 105218	10.02	5.19	32.4 K=1.00	7.2158	-93122.30	300681.00	0.310 [1]
T8	110 - 100	Pirod 105218	10.02	10.02	32.4 K=1.00	7.2158	-110373.00	300681.00	0.367 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T9	100 - 80	Pirod 105219	20.03	10.02	28.4 K=1.00	9.4248	-143037.00	399868.00	0.358 [1]
T10	80 - 60	Pirod 105219	20.03	10.02	28.4 K=1.00	9.4248	-176370.00	399868.00	0.441 [1]
T11	60 - 40	Pirod 105220	20.03	10.02	25.2 K=1.00	11.9282	-209362.00	512375.00	0.409 [1]
T12	40 - 20	Pirod 105220	20.03	10.02	25.2 K=1.00	11.9282	-243205.00	512375.00	0.475 [1]
T13	20 - 0	Pirod 112738	20.03	20.03	32.6 K=1.00	14.7262	-258654.00	613145.00	0.422 [1]

[1] $P_u / \phi P_n$ controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n lb	A in^2	V_u lb	ϕV_n lb	Stress Ratio
T1	194.833 - 190	0.5	1.47	120.0	238565.00	0.1963	188.53	3335.33	0.057
T2	190 - 180	0.5	1.47	120.0	238565.00	0.1963	733.82	3335.33	0.220
T3	180 - 160	0.5	1.47	120.0	238565.00	0.1963	895.49	3335.33	0.268
T4	160 - 150	0.5	1.47	120.0	238565.00	0.1963	1549.99	3335.33	0.465
T5	150 - 140	0.5	1.47	120.0	238565.00	0.1963	555.08	3335.33	0.166
T6	140 - 120	0.5	1.46	119.0	324713.00	0.1963	886.28	3377.71	0.262
T7	120 - 110	0.5	1.46	119.0	324713.00	0.1963	1223.63	3377.71	0.362
T8	110 - 100	0.5	1.46	119.0	324713.00	0.1963	464.28	3377.71	0.137
T9	100 - 80	0.625	1.45	94.4	424115.00	0.3068	956.82	6957.62	0.138
T10	80 - 60	0.625	1.45	94.4	424115.00	0.3068	620.90	6957.62	0.089
T11	60 - 40	0.625	1.43	93.6	536771.00	0.3068	501.11	7011.35	0.072
T12	40 - 20	0.625	1.43	93.6	536771.00	0.3068	1969.79	7011.35	0.281
T13	20 - 0	0.75	1.73	93.9	662680.00	0.4418	988.96	14363.90	0.069

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	194.833 - 190	2L2 1/2x2 1/2x3/16x1/2	7.32	6.32	98.6 K=1.00	1.8047	-430.80	35051.50	0.012 [1]
		2L 'a' > 36.1852 in - 10							
T2	190 - 180	L2 1/2x2 1/2x3/16	14.87	6.59	159.8 K=1.00	0.9020	-1592.05	7982.51	0.199 [1]
T3	180 - 160	L3x3x3/16	14.87	6.59	132.7 K=1.00	1.0900	-4149.07	13933.30	0.298 [1]
T4	160 - 150	L3x3x5/16	14.87	6.59	134.3 K=1.00	1.7800	-6221.04	22303.50	0.279 [1]
T5	150 - 140	L3x3x5/16	14.87	6.59	134.3 K=1.00	1.7800	-7361.02	22303.50	0.330 [1]
T6	140 - 120	L3x3x5/16	16.01	7.52	153.2 K=1.00	1.7800	-7280.61	17138.20	0.425 [1]
T7	120 - 110	L3 1/2x3 1/2x5/16	16.80	7.92	137.8 K=1.00	2.0900	-8110.55	24863.70	0.326 [1]
T8	110 - 100	L3 1/2x3 1/2x5/16	17.62	8.34	145.0	2.0900	-7701.53	22455.00	0.343 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T9	100 - 80	L4x4x1/4	19.30	9.16	K=1.00 138.2	1.9400	-8272.63	22936.80	0.361 [1]
T10	80 - 60	L4x4x3/8	21.03	10.03	K=1.00 152.8	2.8600	-8923.29	27673.60	0.322 [1]
T11	60 - 40	L5x5x3/8	22.81	10.93	K=1.00 132.5	3.6100	-9153.14	46430.00	0.197 [1]
T12	40 - 20	L5x5x3/8	23.71	11.39	K=1.00 138.0	3.6100	-10848.80	42805.70	0.253 [1]
T13	20 - 0	2L3 1/2x3 1/2x3/8x1 2L 'a' > 80.5611 in - 162	31.25	15.01	K=1.00 163.1 K=1.00	4.9688	-17090.40	42196.40	0.405 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T4	160 - 150	L3 1/2x3 1/2x5/16	11.00	9.67	113.7 K=1.06	2.0900	-808.07	34285.00	0.024 [1]
T7	120 - 110	L3x3x5/16	13.48	12.27	159.7 K=1.00	1.7800	-1614.94	15759.70	0.102 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	194.833 - 190	2L2 1/2x2 1/2x3/16x1/2	11.00	7.50	95.3 K=1.00	1.8047	-132.93	36246.80	0.004 [1]
T6	140 - 120	2L 'a' > 28.6149 in - 5 L3 1/2x3 1/2x3/8	11.00	9.67	168.9 K=1.00	2.4800	-689.40	19651.20	0.035 [1]

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	190 - 180	Pirod 105217	10.00	10.00	37.8	5.3014	782.41	238565.00	0.003 [1]
T3	180 - 160	Pirod 105217	20.00	10.00	37.8	5.3014	10411.70	238565.00	0.044 [1]
T4	160 - 150	Pirod 105217	10.00	5.00	37.8	5.3014	19595.50	238565.00	0.082 [1]
T5	150 - 140	Pirod 105217	10.00	10.00	37.8	5.3014	32653.50	238565.00	0.137 [1]
T6	140 - 120	Pirod 105218	20.03	10.02	32.4	7.2158	61160.50	324713.00	0.188 [1]
T7	120 - 110	Pirod 105218	10.02	4.82	32.4	7.2158	74651.00	324713.00	0.230 [1]
T8	110 - 100	Pirod 105218	10.02	10.02	32.4	7.2158	88819.10	324713.00	0.274 [1]
T9	100 - 80	Pirod 105219	20.03	10.02	28.4	9.4248	116884.00	424115.00	0.276 [1]
T10	80 - 60	Pirod 105219	20.03	10.02	28.4	9.4248	144296.00	424115.00	0.340 [1]
T11	60 - 40	Pirod 105220	20.03	10.02	25.2	11.9282	170496.00	536771.00	0.318 [1]
T12	40 - 20	Pirod 105220	20.03	10.02	25.2	11.9282	196517.00	536771.00	0.366 [1]
T13	20 - 0	Pirod 112738	20.03	20.03	32.6	14.7262	209612.00	662680.00	0.316 [1]

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n lb	A in^2	V_u lb	ϕV_n lb	Stress Ratio
T1	194.833 - 190	0.5	1.47	120.0	238565.00	0.1963	188.53	3335.33	0.057
T2	190 - 180	0.5	1.47	120.0	238565.00	0.1963	733.82	3335.33	0.220
T3	180 - 160	0.5	1.47	120.0	238565.00	0.1963	895.49	3335.33	0.268
T4	160 - 150	0.5	1.47	120.0	238565.00	0.1963	1549.99	3335.33	0.465
T5	150 - 140	0.5	1.47	120.0	238565.00	0.1963	555.08	3335.33	0.166
T6	140 - 120	0.5	1.46	119.0	324713.00	0.1963	886.28	3377.71	0.262
T7	120 - 110	0.5	1.46	119.0	324713.00	0.1963	1223.63	3377.71	0.362
T8	110 - 100	0.5	1.46	119.0	324713.00	0.1963	464.28	3377.71	0.137
T9	100 - 80	0.625	1.45	94.4	424115.00	0.3068	956.82	6957.62	0.138
T10	80 - 60	0.625	1.45	94.4	424115.00	0.3068	620.90	6957.62	0.089
T11	60 - 40	0.625	1.43	93.6	536771.00	0.3068	501.11	7011.35	0.072
T12	40 - 20	0.625	1.43	93.6	536771.00	0.3068	1969.79	7011.35	0.281
T13	20 - 0	0.75	1.73	93.9	662680.00	0.4418	988.96	14363.90	0.069

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	194.833 - 190	2L2 1/2x2 1/2x3/16x1/2 2L 'a' > 36.1852 in - 9	7.32	6.32	102.6	1.0371	66.43	45114.30	0.001 [1]
T2	190 - 180	L2 1/2x2 1/2x3/16	14.87	6.59	104.2	0.5183	1404.43	22545.90	0.062 [1]
T3	180 - 160	L3x3x3/16	14.87	6.59	86.4	0.6593	4012.15	28679.40	0.140 [1]
T4	160 - 150	L3x3x5/16	14.87	6.59	87.9	1.0713	6030.06	46602.80	0.129 [1]
T5	150 - 140	L3x3x5/16	14.87	6.59	87.9	1.0713	6918.65	46602.80	0.148 [1]
T6	140 - 120	L3x3x5/16	16.01	7.52	100.0	1.0713	7247.45	46602.80	0.156 [1]
T7	120 - 110	L3 1/2x3 1/2x5/16	16.80	7.92	89.9	1.3038	7605.59	56716.50	0.134 [1]
T8	110 - 100	L3 1/2x3 1/2x5/16	17.62	8.34	94.5	1.3038	7587.54	56716.50	0.134 [1]
T9	100 - 80	L4x4x1/4	18.45	8.74	85.8	1.1972	8099.35	52077.70	0.156 [1]
T10	80 - 60	L4x4x3/8	20.16	9.60	95.6	1.7583	8782.79	76485.20	0.115 [1]
T11	60 - 40	L5x5x3/8	22.81	10.93	85.6	2.3208	9332.20	100954.00	0.092 [1]
T12	40 - 20	L5x5x3/8	24.62	11.84	92.6	2.3208	11044.70	100954.00	0.109 [1]
T13	20 - 0	2L3 1/2x3 1/2x3/8x1	31.25	15.01	170.9	3.0938	13905.70	134578.00	0.103 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
		2L 'a' > 80.5611 in - 162							

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T4	160 - 150	L3 1/2x3 1/2x5/16	11.00	9.67	111.1	1.4210	1117.45	61814.20	0.018 [1]
T7	120 - 110	L3x3x5/16	13.48	12.27	162.4	1.1885	1614.94	51700.40	0.031 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	194.833 - 190	2L2 1/2x2 1/2x3/16x1/2 2L 'a' > 28.6149 in - 4	11.00	7.50	77.1	1.8047	177.26	58471.90	0.003 [1]
T6	140 - 120	L3 1/2x3 1/2x3/8	11.00	9.67	112.2	1.5436	875.28	67146.30	0.013 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	194.833 - 190	Leg	Pirod 105217	2	-883.03	214859.00	5.7	Pass
T2	190 - 180	Leg	Pirod 105217	14	-6363.64	214859.00	22.0	Pass
T3	180 - 160	Leg	Pirod 105217	22	-14732.60	214859.00	26.8	Pass
T4	160 - 150	Leg	Pirod 105217	39	-27474.50	214859.00	46.5	Pass
T5	150 - 140	Leg	Pirod 105217	51	-42701.40	214859.00	19.9	Pass
T6	140 - 120	Leg	Pirod 105218	59	-59807.50	300681.00	26.2	Pass
T7	120 - 110	Leg	Pirod 105218	78	-93122.30	300681.00	36.2	Pass
T8	110 - 100	Leg	Pirod 105218	90	-110373.00	300681.00	36.7	Pass
T9	100 - 80	Leg	Pirod 105219	99	-143037.00	399868.00	35.8	Pass
T10	80 - 60	Leg	Pirod 105219	114	-176370.00	399868.00	44.1	Pass
T11	60 - 40	Leg	Pirod 105220	129	-209362.00	512375.00	40.9	Pass
T12	40 - 20	Leg	Pirod 105220	144	-243205.00	512375.00	47.5	Pass
T13	20 - 0	Leg	Pirod 112738	159	-258654.00	613145.00	42.2	Pass
T1	194.833 - 190	Diagonal	2L2 1/2x2 1/2x3/16x1/2	10	-430.80	35051.50	1.2	Pass
T2	190 - 180	Diagonal	L2 1/2x2 1/2x3/16	19	-1592.05	7982.51	19.9	Pass
T3	180 - 160	Diagonal	L3x3x3/16	28	-4149.07	13933.30	29.8 39.5 (b)	Pass
T4	160 - 150	Diagonal	L3x3x5/16	43	-6221.04	22303.50	27.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T5	150 - 140	Diagonal	L3x3x5/16	55	-7361.02	22303.50	35.6 (b) 33.0	Pass
T6	140 - 120	Diagonal	L3x3x5/16	67	-7280.61	17138.20	40.8 (b) 42.5	Pass
T7	120 - 110	Diagonal	L3 1/2x3 1/2x5/16	82	-8110.55	24863.70	42.8 (b) 32.6	Pass
T8	110 - 100	Diagonal	L3 1/2x3 1/2x5/16	94	-7701.53	22455.00	37.4 (b) 34.3	Pass
T9	100 - 80	Diagonal	L4x4x1/4	101	-8272.63	22936.80	37.3 (b) 36.1	Pass
T10	80 - 60	Diagonal	L4x4x3/8	118	-8923.29	27673.60	49.3 (b) 32.2	Pass
T11	60 - 40	Diagonal	L5x5x3/8	133	-9153.14	46430.00	35.6 (b) 19.7	Pass
T12	40 - 20	Diagonal	L5x5x3/8	153	-10848.80	42805.70	29.2 (b) 25.3	Pass
T13	20 - 0	Diagonal	2L3 1/2x3 1/2x3/8x1	162	-17090.40	42196.40	34.5 (b) 40.5	Pass
T4	160 - 150	Secondary Horizontal	L3 1/2x3 1/2x5/16	47	-808.07	34285.00	2.4	Pass
T7	120 - 110	Secondary Horizontal	L3x3x5/16	86	-1614.94	15759.70	7.0 (b) 10.2	Pass
T1	194.833 - 190	Top Girt	2L2 1/2x2 1/2x3/16x1/2	6	-114.53	36246.80	20.3 (b) 0.6	Pass
T6	140 - 120	Top Girt	L3 1/2x3 1/2x3/8	61	-689.40	19651.20	3.5	Pass
							3.6 (b)	
							Summary	
						Leg (T12)	47.5	Pass
						Diagonal (T9)	49.3	Pass
						Secondary Horizontal (T7)	20.3	Pass
						Top Girt (T6)	3.6	Pass
						Bolt Checks	49.3	Pass
						RATING =	**49.3**	**Pass**

Anchor Rod Check for Self Supporting Towers

TIA-222-G, Section 4.9.9 Rev. 6.1

Site Data	
BU#:	
Site Name:	CT33XC025
App #:	

Reactions		
Eta Factor, η	0.55	Detail Type
Uplift, Pu:	224.3	kips
Shear, Vu:	29.9	kips

Anchor Rod Data		
Qty:	4	
Diam:	1.75	in
Rod Material:	A449 (1-3/4 to 3 Incl.)	
Strength (Fu):	90	ksi
Yield (Fy):	58	ksi

* Rod Circle:		in
* e:		in
* # of Rods		1 or 2

Mu= Pu x e:		ft-kips

l_{ar}:		in
Mu = 0.65*l_{ar}*V_u		ft-kips

** Only enter rod circle, offset (e) and number of anchor rods at the extreme fiber to consider if eccentric load due to leg reinforcement exist.*

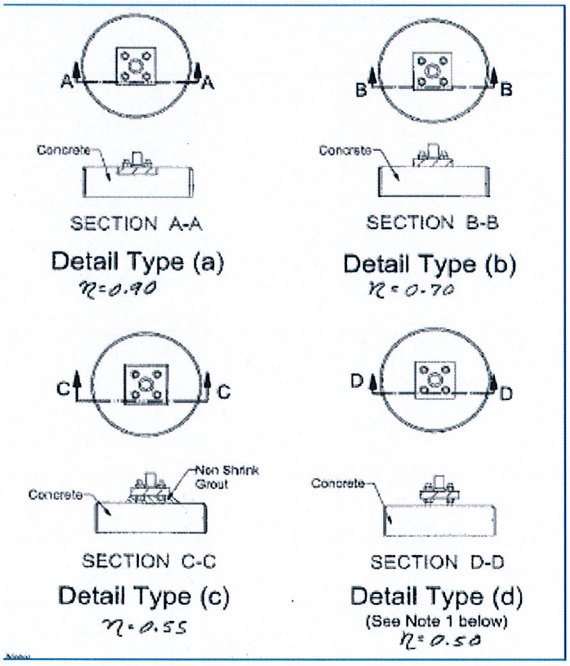


Figure 4-4 of TIA-222-G

Anchor Rod Results:

Max Rod (Cu+ Vu/ɳ):	69.7	Kips
Design Axial, Φ*Fu*Anet:	136.8	Kips
Anchor Rod Stress Ratio:	50.9%	

If Applicable;

Anchor Rod Results with Bending Considered:

When the clear distance from the top of concrete to the bottom of level nut excceeds 1.0 times the diameter of the anchor rod, the following interaction equation shall also be satisfied (see Figure 4-4 of Rev. G):

$$(V_u/\phi R_{nv})^2 + [(P_u/\phi R_{nt}) + (M_u/\phi R_{nm})]^2 <= 1$$

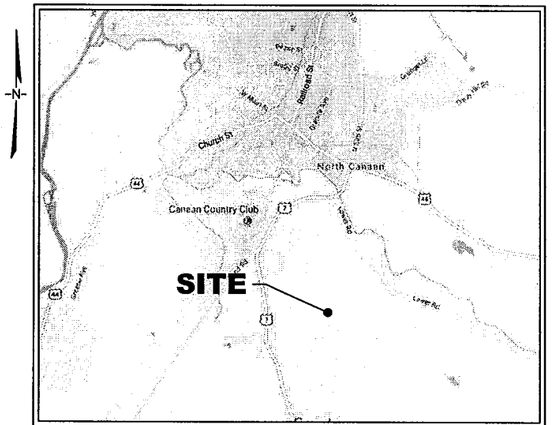
$\phi R_{nv}=\phi*0.45*F_{ub}*A_b=$		kips
$\phi R_{nt}=\phi*F_u*A_{net}=$		kips
$\phi R_{nm}=\phi*F_y*Z=$		ft-kips

Maximum Acceptable Ratio:	105	%
Governing Stress Ratio:	50.9%	**Pass**

Sprint®

"DO MACRO UPGRADE"

CT33XC025
39 LOWER ROAD
NORTH CANAAN, CT 06018



KEY MAP
SCALE = N.T.S.

SITE LOCATION INFORMATION

SITE ID NUMBER:	CT33XC025
SITE NAME:	LITCHFIELD COUNTY DISPATCH
SITE ADDRESS:	39 LOWER ROAD NORTH CANAAN, CT 06018
PARCEL ID:	15/085-1
PROPERTY OWNER:	THOMAS J FOLEY JR RET & DOROTHY K FOLEY RET
APPLICANT:	SPRINT 6100 SPRINT PARKWAY OVERLAND PARK, KS 66251
COUNTY:	LITCHFIELD COUNTY

SITE CHARACTERISTICS

LATITUDE:	42.01605
LONGITUDE:	-73.32629166
STRUCTURE TYPE:	SELF SUPPORT TOWER
LOCATION OF PROPOSED EQUIPMENT:	EXISTING CONCRETE EQUIPMENT PAD
STRUCTURE HEIGHT:	±195'-0" AGL
ANTENNA (RAD CENTER):	±154'-0" AGL (ALPHA) ±154'-0" AGL (BETA) ±154'-0" AGL (GAMMA)

SHEET INDEX

SIGNATURE BLOCK:

SPRINT REPRESENTATIVE:	DATE
SPRINT RF ENGINEER:	DATE
PROPERTY OWNER:	DATE

COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE

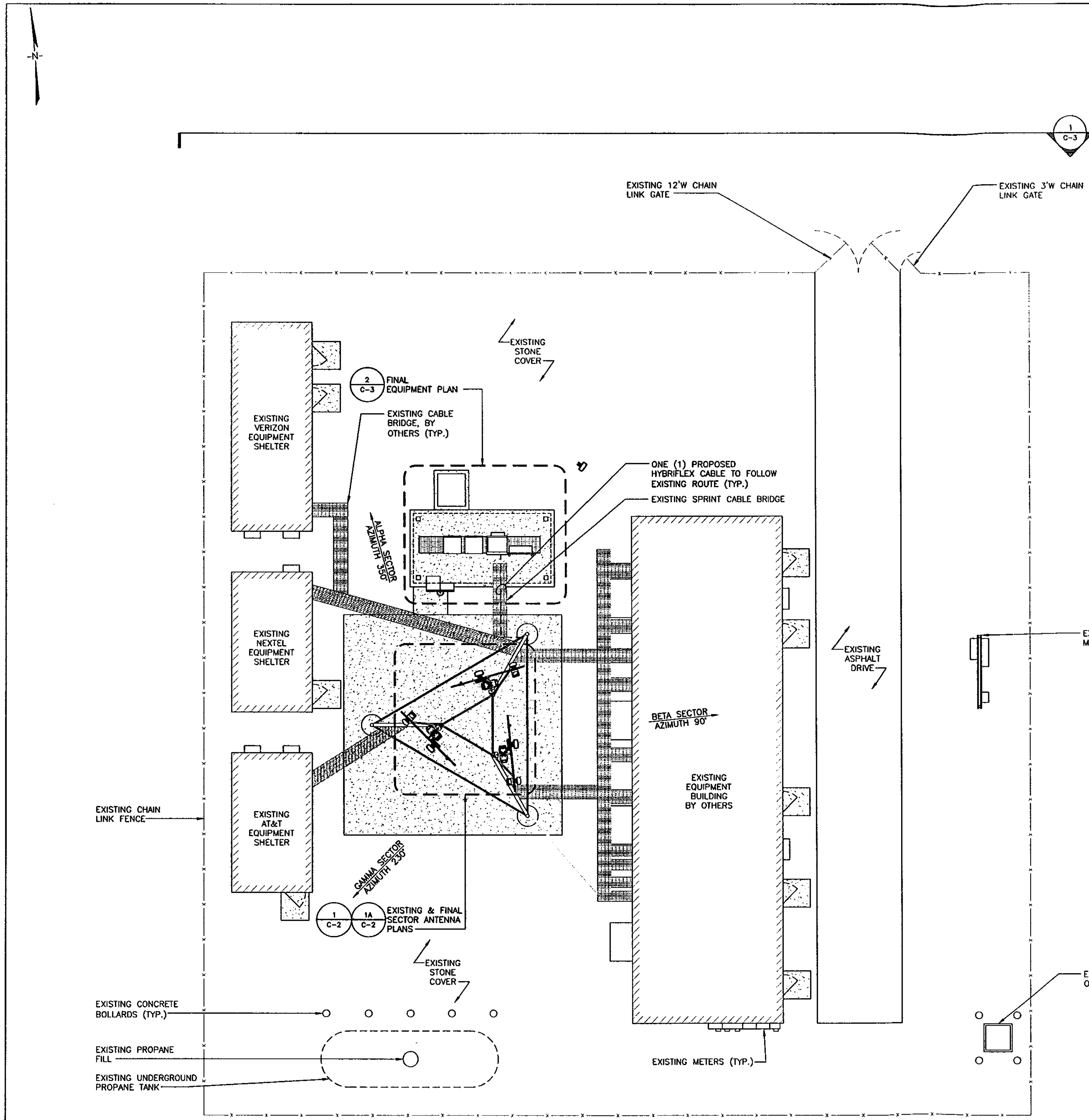
CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

DRAWING TITLE:

TITLE SHEET

DRAWING SHEET: 1 OF 10

T-1



1 | COMPOUND PLAN
C-1 | SCALE: 1/8"=1'
(24"x36" SHEET SIZE)

GENERAL NOTES:

1. SUBJECT PROPERTY IS KNOWN AS TAX PARCEL ID 15/085-1. AS SHOWN THE OFFICIAL TAX MAP OF THE TOWN OF NORTH CANAAN, CT.
2. THE APPLICANT PROPOSES TO INSTALL ONE (1) NEW ANTENNA PER SECTOR (3 TOTAL) ON PROPOSED MOUNTING HARDWARE AND INSTALL TWO (2) NEW RRHs PER SECTOR BEHIND ANTENNAS.
3. CONTRACTOR SHALL NOT COMMENCE ANY WORK UNTIL HE OBTAINS, AT HIS OWN EXPENSE, ALL INSURANCE REQUIRED BY SPRINT, THE PROPERTY OWNER AND/OR PROPERTY MANAGEMENT COMPANY.
4. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH OF THE DRAWINGS HAVE BEEN REVISED TO INDICATED "ISSUED FOR CONSTRUCTION".
5. SITE INFORMATION SHOWN TAKEN FROM PLANS PREPARED BY ALCATEL-LUCENT FOR SPRINT'S INSTALLATION ON THIS FACILITY. DRAWINGS ENTITLED "SPRINT, SITE NAME: CANNONSVILLE RES/LITCHFIELD COUUNTY DISPATCH NUMBER: CT33XC025" DATED 10/17/12. ADDITIONAL SITE INFORMATION WAS SUPPLEMENTED WITH A LIMITED SITE VISIT BY COM-EX CONSULTANTS ON 08/15/17.
6. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES OR OTHER PUBLIC AUTHORITIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
8. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THIS PROJECT IN ACCORDANCE WITH THE OVERALL INTENT OF THESE DRAWINGS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
10. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
11. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
12. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
13. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
14. THE CONSTRUCTION CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ALL CONSTRUCTION MEANS AND METHODS. THE CONSTRUCTION CONTRACTOR IS ALSO RESPONSIBLE FOR ALL JOB SITE SAFETY.
15. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.
16. THE CONTRACTOR IS TO REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND RELATED PARTIES. THE SUBCONTRACTOR SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT EFFECTS THEIR WORK.
17. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON THE SITE AT ALL TIMES AND INSURE THE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA CONTRACTOR FURNISH 3 SETS OF REDLINE "AS-BUILT" DRAWINGS TO SPRINT UPON COMPLETION OF THE WORK.
18. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. MINOR MODIFICATIONS MAT BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL INCLUDED AS PART OF THE WORK.
19. ALL MATERIAL PROVIDED BY IS TO BE REVIEWED BY THE CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTOR PRIOR TO INSTALLATION. ANY DEFICIENCIES TO PROVIDE MATERIALS SHALL BE BROUGHT TO THE CONSTRUCTION MANAGERS ATTENTION IMMEDIATELY.
20. THE MATERIALS INSTALLED SHALL MEET REQUIREMENTS OF CONTRACTORS DOCUMENTS. NO SUBSTITUTIONS ARE ALLOWED.
21. THE CONTRACTOR SHALL COORDINATE ALL CIVIL, STRUCTURAL AND ELECTRICAL DRAWINGS FOR THE LOCATIONS OF ALL OPENINGS, RECESSES, BUILT-IN WORK, ETC..
22. THE CONTRACTOR SHALL RECEIVE CLARIFICATION IN WRITING AND SHALL RECEIVE IN WRITING AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEMS NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTACT DOCUMENTS.
23. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND TO BE IN THE FIELD.
24. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMEN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST-ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAND PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
25. THE CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE HIS ACTIVITIES AND WORKING HOURS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROPERTY OWNER AND/OR PROPERTY MANAGEMENT COMPANY.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT MAY RELATE TO RADIO EQUIPMENT, ANTENNAS AND ANY OTHER PORTIONS OF THE WORK.
27. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OR WHERE LOCAL CODES OR REGULATIONS MAY TAKE PRECEDENCE.
28. THE CONTRACTOR SHALL REPAIR ALL EXISTING SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
29. THE CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE AND DISPOSE OF ALL DEBRIS AND RUBBISH. LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ITEMS UNTIL COMPLETION OF CONSTRUCTION.
30. BEFORE FINAL ACCEPTANCE OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT, TEMPORARY WORKS, UNUSED AND USELESS MATERIALS, RUBBISH AND TEMPORARY STRUCTURES.
31. DESIGN REQUIREMENTS PER INTERNATIONAL BUILDING CODE 2012, CONNECTICUT STATE BUILDING CODE 2016, AND THE EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.

COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE

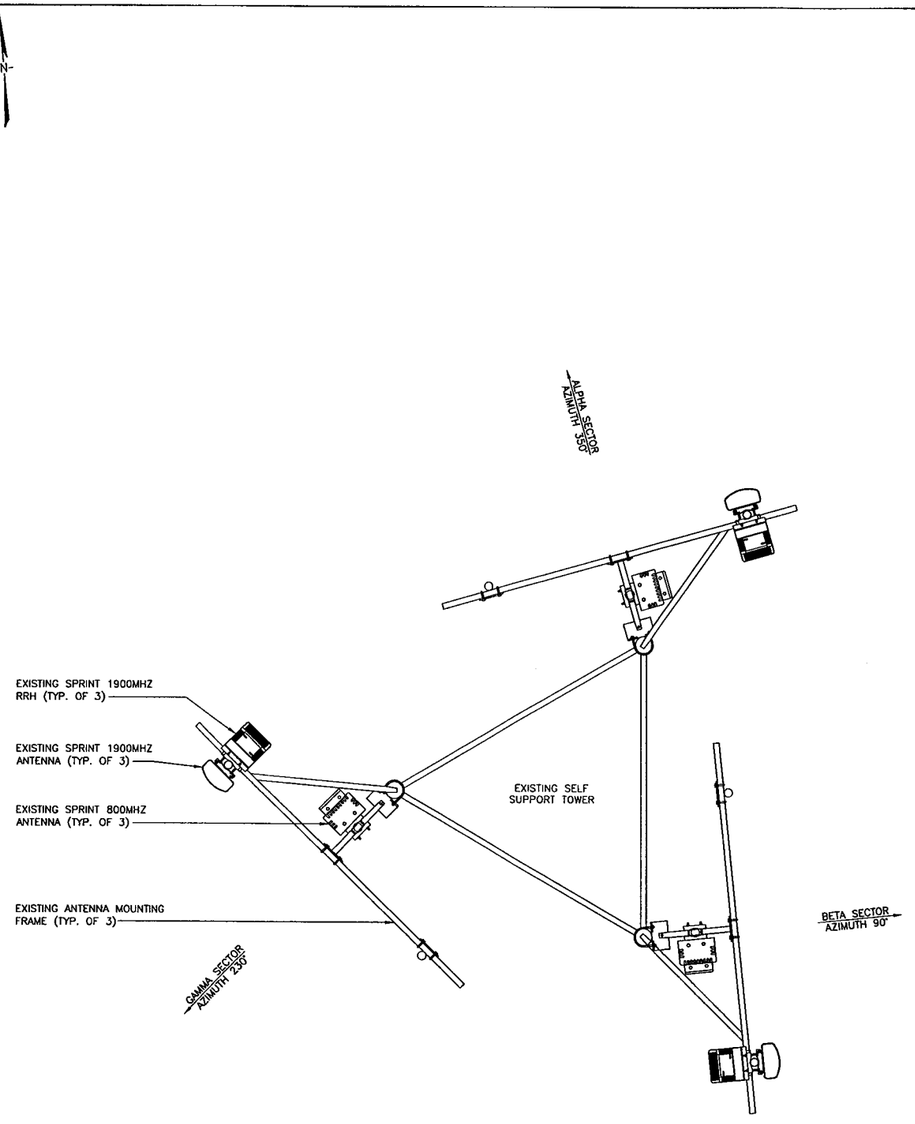
CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

DRAWING TITLE:

COMPOUND PLAN & GENERAL NOTES

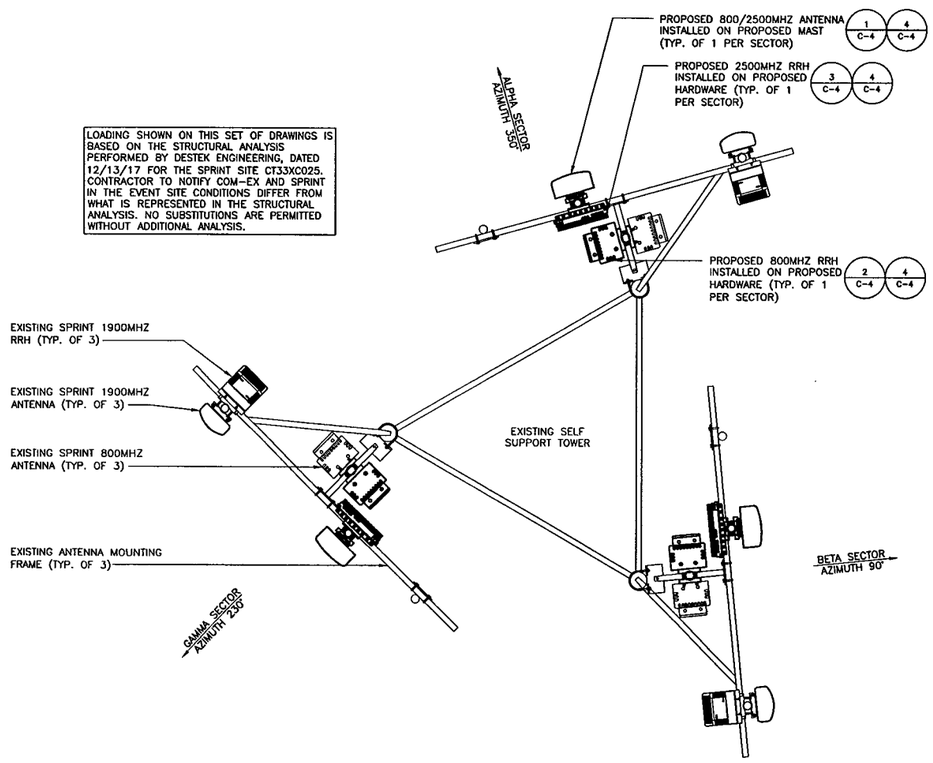
DRAWING SHEET: 2 OF 10

C-1



1 / C-2 EXISTING ANTENNA PLAN (ALL SECTORS)
SCALE: 1/2"=1'

LOADING SHOWN ON THIS SET OF DRAWINGS IS BASED ON THE STRUCTURAL ANALYSIS PERFORMED BY DESTEK ENGINEERING, DATED 12/13/17 FOR THE SPRINT SITE CT33XC025. CONTRACTOR TO NOTIFY COM-EX AND SPRINT IN THE EVENT SITE CONDITIONS DIFFER FROM WHAT IS REPRESENTED IN THE STRUCTURAL ANALYSIS. NO SUBSTITUTIONS ARE PERMITTED WITHOUT ADDITIONAL ANALYSIS.



1A / C-2 FINAL ANTENNA PLAN (ALL SECTORS)
SCALE: 1/2"=1'

COM-EX
Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE

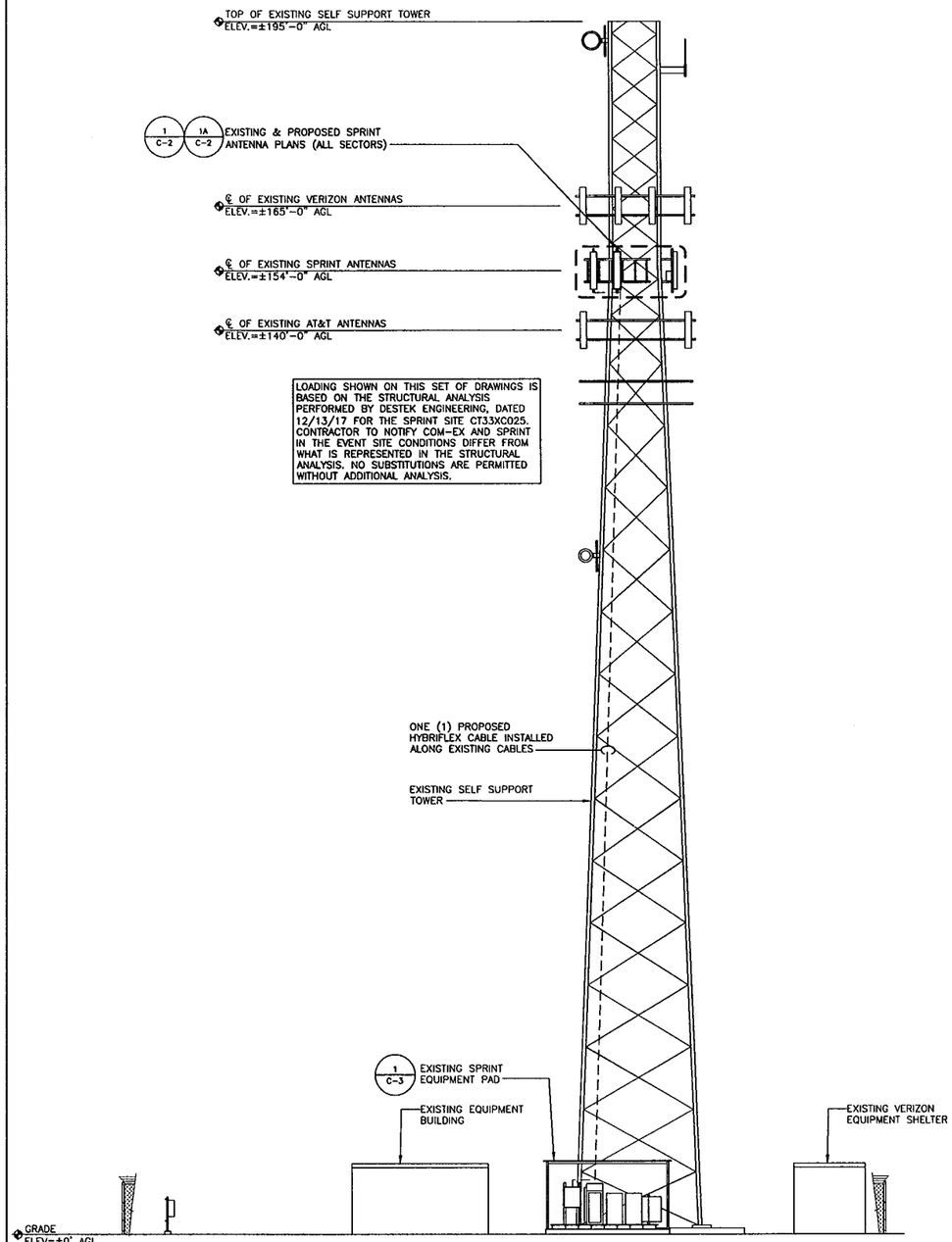
CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

DRAWING TITLE:

EXISTING & FINAL ANTENNA PLANS

DRAWING SHEET: 3 OF 10

C-2

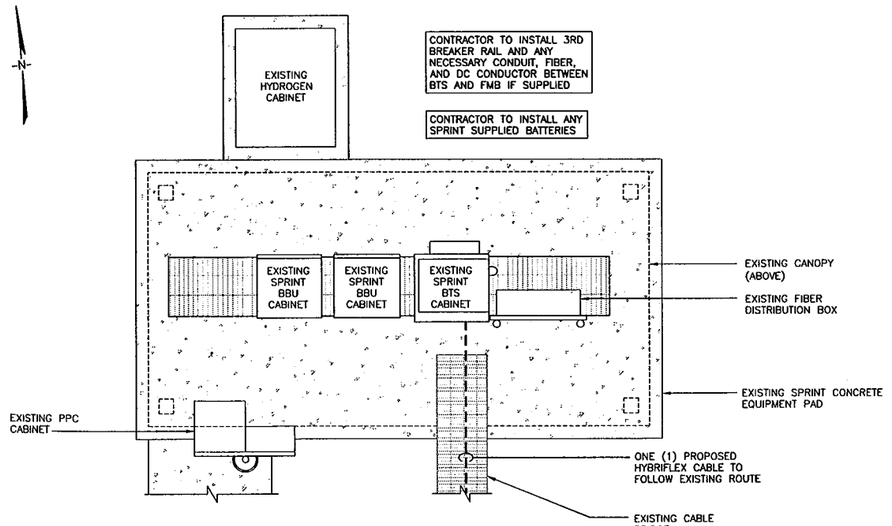


1 / C-3 ELEVATION
SCALE: 3/32"=1'
(24"x36" SHEET SIZE)

BILL OF MATERIALS

	DESCRIPTION	QUANTITY EACH	DIMENSIONS (HxWxD)	WEIGHT (LBS) EACH	MANUFACTURER: PART/ MODEL#
ANTENNAS / RRHs	800/2500 MHz PANEL ANTENNA – SECTOR 1	1	72"x14"x8"	58 LBS W/OUT MOUNTING HARDWARE	COMMSCOPE: DT465B-2XR
	800 MHz RRH, 2x50W, -48V	1	16"x13"x10"	69.1 LBS W/OUT MOUNTING HARDWARE	ALU: RRH-2x50-800
	800MHz RRH NOTCH FILTER	1	8.9"x8.9"x4.5"	9.45 LBS W/OUT MOUNTING HARDWARE	TBD
	2500 MHz RRH, 8x20-25	1	26"x18.6"x6.7"	76.2 LBS W/OUT MOUNTING HARDWARE	ALU: TD-RRH8x20-25
	800/2500 MHz PANEL ANTENNA – SECTOR 2	1	72"x14"x8"	58 LBS W/OUT MOUNTING HARDWARE	COMMSCOPE: DT465B-2XR
	800 MHz RRH, 2x50W, -48V	1	16"x13"x10"	69.1 LBS W/OUT MOUNTING HARDWARE	ALU: RRH-2x50-800
	800MHz RRH NOTCH FILTER	1	8.9"x8.9"x4.5"	9.45 LBS W/OUT MOUNTING HARDWARE	TBD
	2500 MHz RRH, 8x20-25	1	26"x18.6"x6.7"	76.2 LBS W/OUT MOUNTING HARDWARE	ALU: TD-RRH8x20-25
	800/2500 MHz PANEL ANTENNA – SECTOR 3	1	72"x14"x8"	58 LBS W/OUT MOUNTING HARDWARE	COMMSCOPE: DT465B-2XR
	800 MHz RRH, 2x50W, -48V	1	16"x13"x10"	69.1 LBS W/OUT MOUNTING HARDWARE	ALU: RRH-2x50-800
	800MHz RRH NOTCH FILTER	1	8.9"x8.9"x4.5"	9.45 LBS W/OUT MOUNTING HARDWARE	TBD
	2500 MHz RRH, 8x20-25	1	26"x18.6"x6.7"	76.2 LBS W/OUT MOUNTING HARDWARE	ALU: TD-RRH8x20-25

	DESCRIPTION	QUANTITY EACH	DIMENSIONS (LENGTH)	WEIGHT (LBS/FOOT)	MANUFACTURER: SIZE/PART/MODEL#
CABLES	SECTOR 1 HYBRIFLEX RUN (BTS TO RRH)	1	±200'	1.3 LBS	RFS: 1-1/4" / HB114-1-08U4-M5J
	SECTOR 1 COAX CABLE JUMPERS	11	10'	N/A	LDF4-50 (OR EQUIVALENT)
	SECTOR 1 R.E.T. CABLES	4	(3) 10' / (1) 2'	N/A	TBD
	SECTOR 2 COAX CABLE JUMPERS	11	10'	N/A	LDF4-50 (OR EQUIVALENT)
	SECTOR 2 R.E.T. CABLES	4	(3) 10' / (1) 2'	N/A	TBD
	SECTOR 3 COAX CABLE JUMPERS	11	10'	N/A	LDF4-50 (OR EQUIVALENT)
	SECTOR 3 R.E.T. CABLES	4	(3) 10' / (1) 2'	N/A	TBD



2 / C-3 FINAL EQUIPMENT PLAN
SCALE: 1/2"=1'

COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE

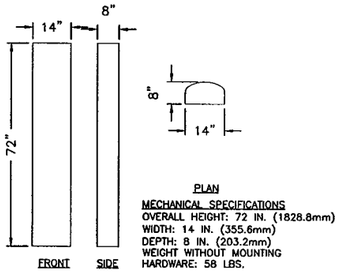
CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

DRAWING TITLE:

TOWER ELEVATION, B.O.M., & FINAL EQUIPMENT PLAN

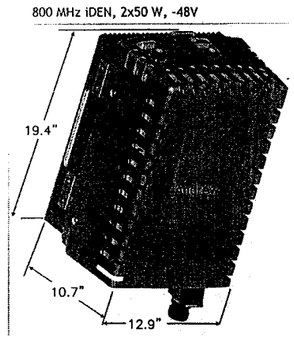
DRAWING SHEET: 4 OF 10

C-3

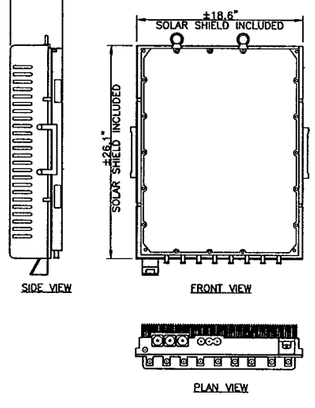


MECHANICAL SPECIFICATIONS
OVERALL HEIGHT: 72 IN. (1828.8mm)
WIDTH: 14 IN. (355.6mm)
DEPTH: 8 IN. (203.2mm)
WEIGHT WITHOUT MOUNTING HARDWARE: 58 LBS.

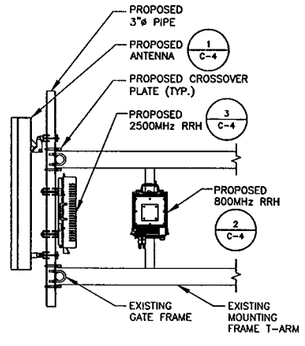
1 / C-4 800/2500MHz ANTENNA COMMSCOPE: DT465B-2XR
SCALE: 1/2"=1'



2 / C-4 800MHz RRH DETAIL
SCALE: N.T.S.



3 / C-4 2500MHz RRH DETAIL
SCALE: N.T.S.

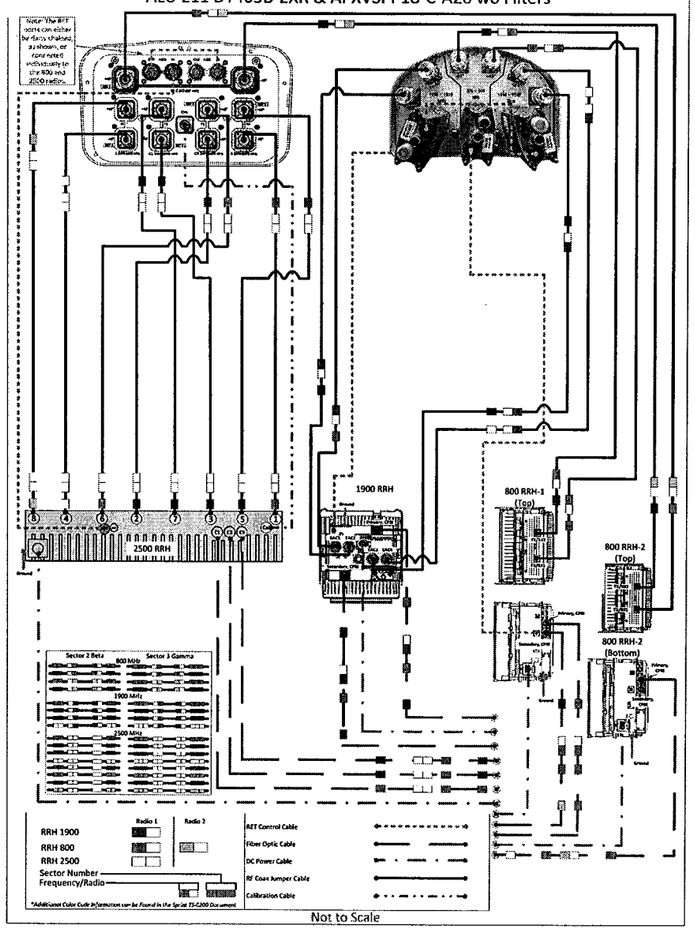


4 / C-4 TYPICAL ANTENNA AND RRH INSTALLATION DETAIL
SCALE: N.T.S.

Prepared By: Mark Elliott	Revision Date: August 23, 2017 — Revision Number: R4
Approved By: RAN Hardware & Antenna Teams	Approval Date: DRAFT-Macro Generated

Sprint

ALU 211 DT465B-2XR & APXVSPP18-C-A20 wo Filters



Not to Scale

5 / C-4 SCHEMATIC
SCALE: N.T.S.

COM-EX Consultants
115 Route 46
Suite E30
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE

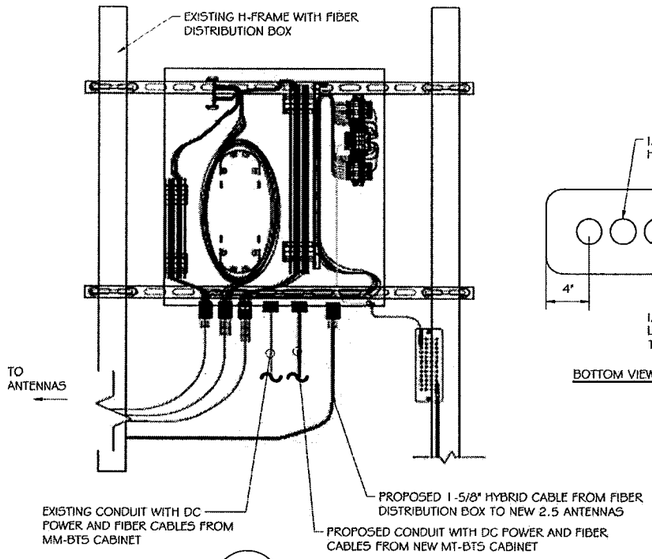
CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

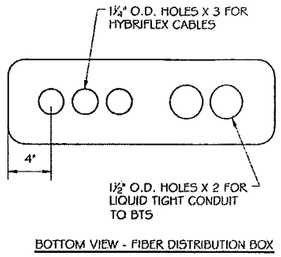
DRAWING TITLE:

CONSTRUCTION DETAILS & SCHEMATIC

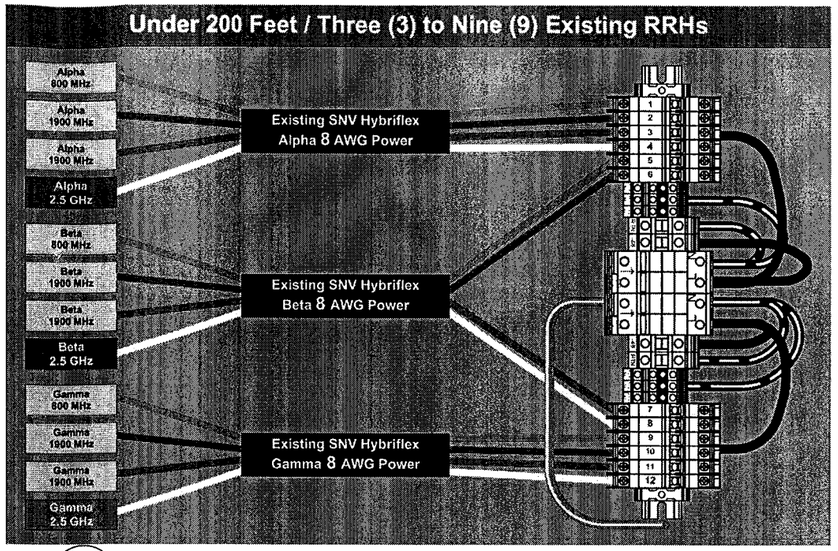
DRAWING SHEET: 5 OF 10

C-4

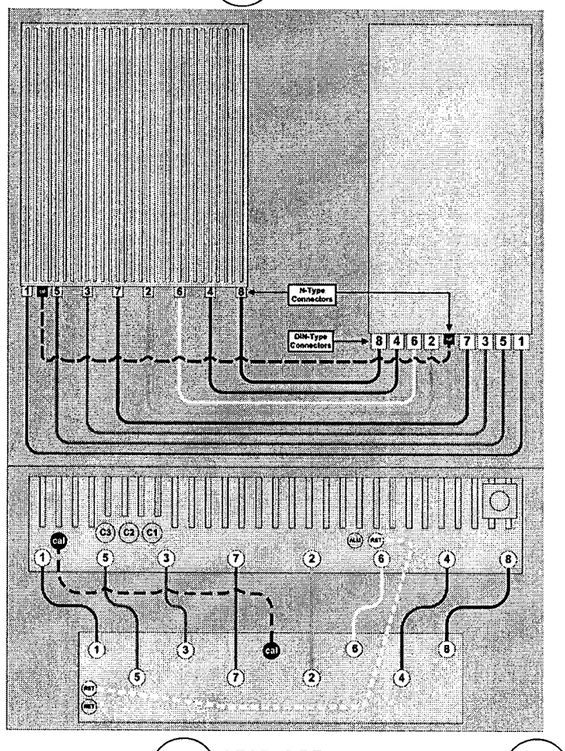




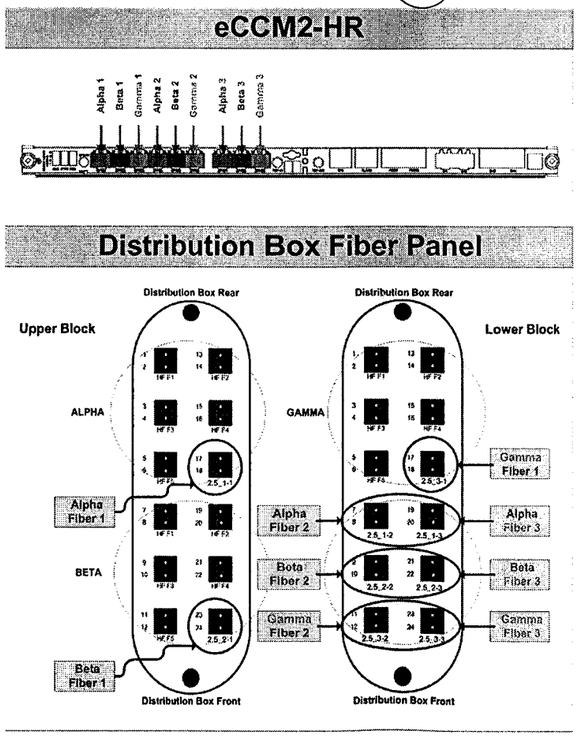
1 C-5 TYPICAL FIBER DISTRIBUTION BOX DETAIL
SCALE: NTS



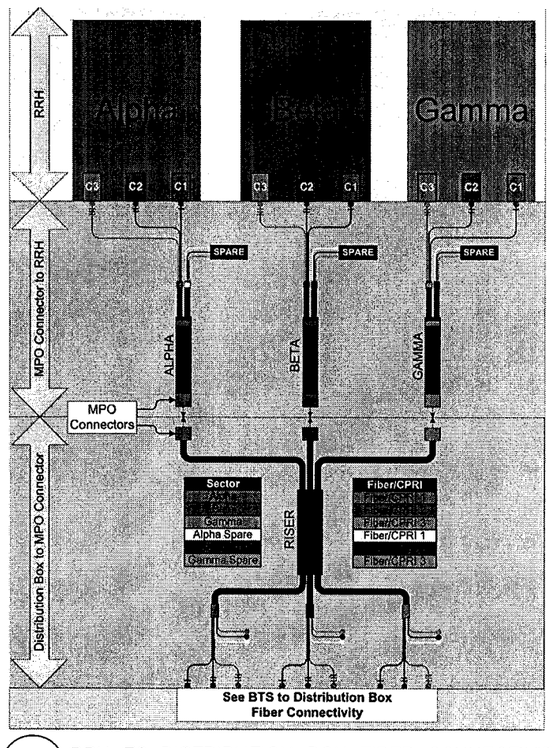
2 C-5 RRH TO DISTRIBUTION BOX POWER CONNECTIVITY DETAIL
SCALE: NTS



3 C-5 8T8R DETAIL
SCALE: NTS



4 C-5 BTS TO DISTRIBUTION BOX FIBER CONNECTIVITY DETAIL
SCALE: NTS



5 C-5 RRH TO DISTRIBUTION BOX FIBER CONNECTIVITY DETAIL
SCALE: NTS

COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE

INFORMATION ON THIS SET OF DRAWINGS IS NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A DATED SEAL & SIGNATURE OF A PROFESSIONAL ENGINEER.
No. 28643
NICHOLAS D. BARNE
PROFESSIONAL ENGINEER

CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

DRAWING TITLE:

FIBER PLUMBING DIAGRAM

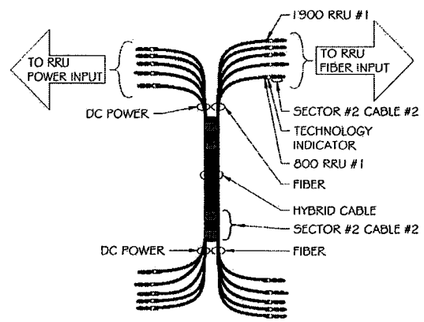
DRAWING SHEET: 6 OF 10

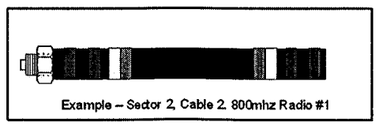
C-5

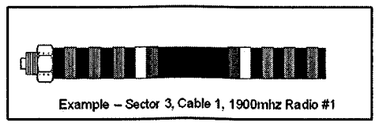
2.5 FREQUENCY	INDICATOR		ID
2500 -1	YEL	WHT	GRN
2500 -2	YEL	WHT	RED
2500 -3	YEL	WHT	BRN
2500 -4	YEL	WHT	BLU
2500 -5	YEL	WHT	SLT
2500 -6	YEL	WHT	ORG
2500 -7	YEL	WHT	WHT
2500 -8	YEL	WHT	BLK

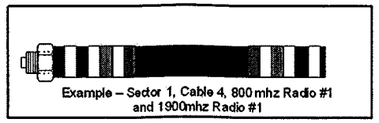
NV FREQUENCY	INDICATOR	ID
800-1	YEL	GRN
1900-1	YEL	RED
1900-2	YEL	BRN
1900-3	YEL	BLU
1900-4	YEL	SLT
800-1	YEL	ORG
RESERVED	YEL	WHT
RESERVED	YEL	BLK

Sector	Cable	First Ring	Second Ring	Third Ring
1 Alpha	1	Green	No Tape	No Tape
1	2	Red	No Tape	No Tape
1	3	Brown	No Tape	No Tape
1	4	White	No Tape	No Tape
1	5	Red	No Tape	No Tape
1	6	Grey	No Tape	No Tape
1	7	Purple	No Tape	No Tape
1	8	Orange	No Tape	No Tape
2 Beta	1	Green	Green	No Tape
2	2	Red	Red	No Tape
2	3	Brown	Brown	No Tape
2	4	White	White	No Tape
2	5	Red	Red	No Tape
2	6	Grey	Grey	No Tape
2	7	Purple	Purple	No Tape
2	8	Orange	Orange	No Tape
3 Gamma	1	Green	Green	Green
3	2	Red	Red	Red
3	3	Brown	Brown	Brown
3	4	White	White	White
3	5	Red	Red	Red
3	6	Grey	Grey	Grey
3	7	Purple	Purple	Purple
3	8	Orange	Orange	Orange




Example – Sector 2, Cable 2, 800mhz Radio #1


Example – Sector 3, Cable 1, 1900mhz Radio #1


Example – Sector 1, Cable 4, 800 mhz Radio #1 and 1900mhz Radio #1

1 / C-6 COLOR CODING CHARTS
SCALE: NTS

CABLE MARKING NOTES

1. ALL CABLES SHALL BE MARKED WITH 2" WIDE, UV STABILIZED, UL APPROVED TAPE.
2. THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM THE END CONNECTOR, WEATHERPROOFING, OR BREAKOUT UNIT. THERE SHALL BE 1" SPACE BETWEEN EACH RING.
3. A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.
4. THE 2" COLORED TAPE(S) SHALL BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.
5. SITES WITH MORE THAN FOUR (4) SECTORS WILL REQUIRE ADDITIONAL RINGS FOR EACH SECTOR, FOLLOWING THE PATTERN. HIGH CAPACITY SITES WILL USE THE SECOND CABLE IDENTIFIED BY BLUE BANDS OF TAPE
6. HYBRID FIBER CABLE SHALL BE SECTOR IDENTIFIED INSIDE THE CABINET ON FREQUENCY BUNDLES, ON THE SEALTITE, ON THE MAIN LINE UPON EXIT OF SEALTITE, AND BEFORE AND AFTER THE BREAKOUT UNIT (MEDUSA), AS WELL AS BEFORE AND AFTER ANY ENTRANCE OR EXIT.
7. HFC "MAIN TRUNK" WILL NOT BE MARKED WITH THE FREQUENCY CODES, AS IT CONTAINS ALL FREQUENCIES.
8. INDIVIDUAL POWER PAIRS AND FIBER BUNDLES SHALL BE LABELED WITH BOTH THE CABLE AND FREQUENCY.

COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

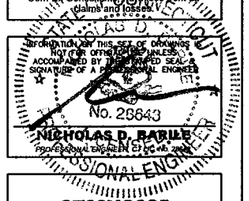
Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE



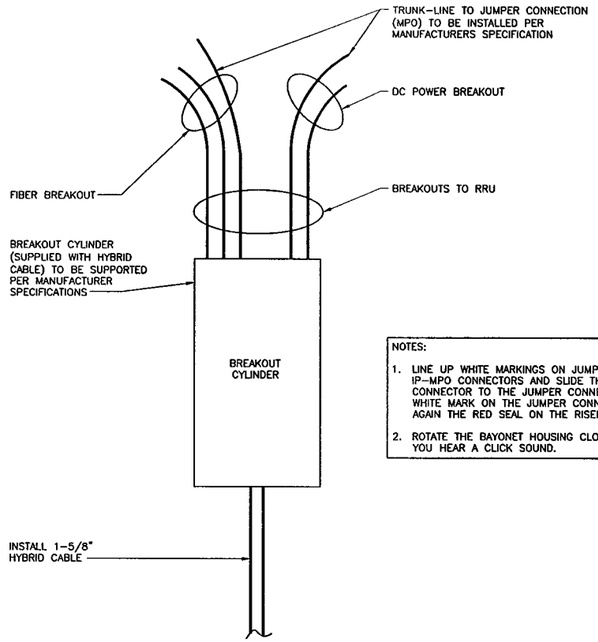
CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

DRAWING TITLE:

CABLE COLOR CODING

DRAWING SHEET: 7 OF 10

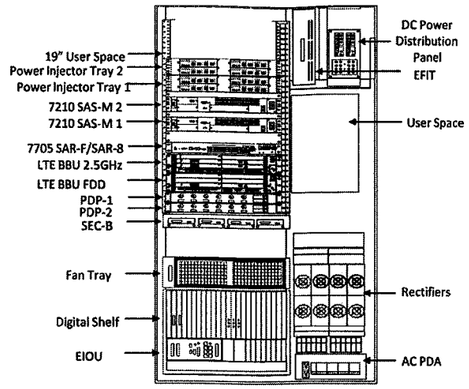
C-6



NOTES:

1. LINE UP WHITE MARKINGS ON JUMPER AND RISER IP-MPO CONNECTORS AND SLIDE THE RISER CONNECTOR TO THE JUMPER CONNECTOR. PUSH THE WHITE MARK ON THE JUMPER CONNECTOR FLUSH AGAIN THE RED SEAL ON THE RISER CONNECTOR.
2. ROTATE THE BAYONET HOUSING CLOCKWISE UNTIL YOU HEAR A CLICK SOUND.

1 / C-7 HYBRID BREAKOUT DETAIL
SCALE: NTS



2 / C-7 EXISTING MMBS CABINET
SCALE: NTS

COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE

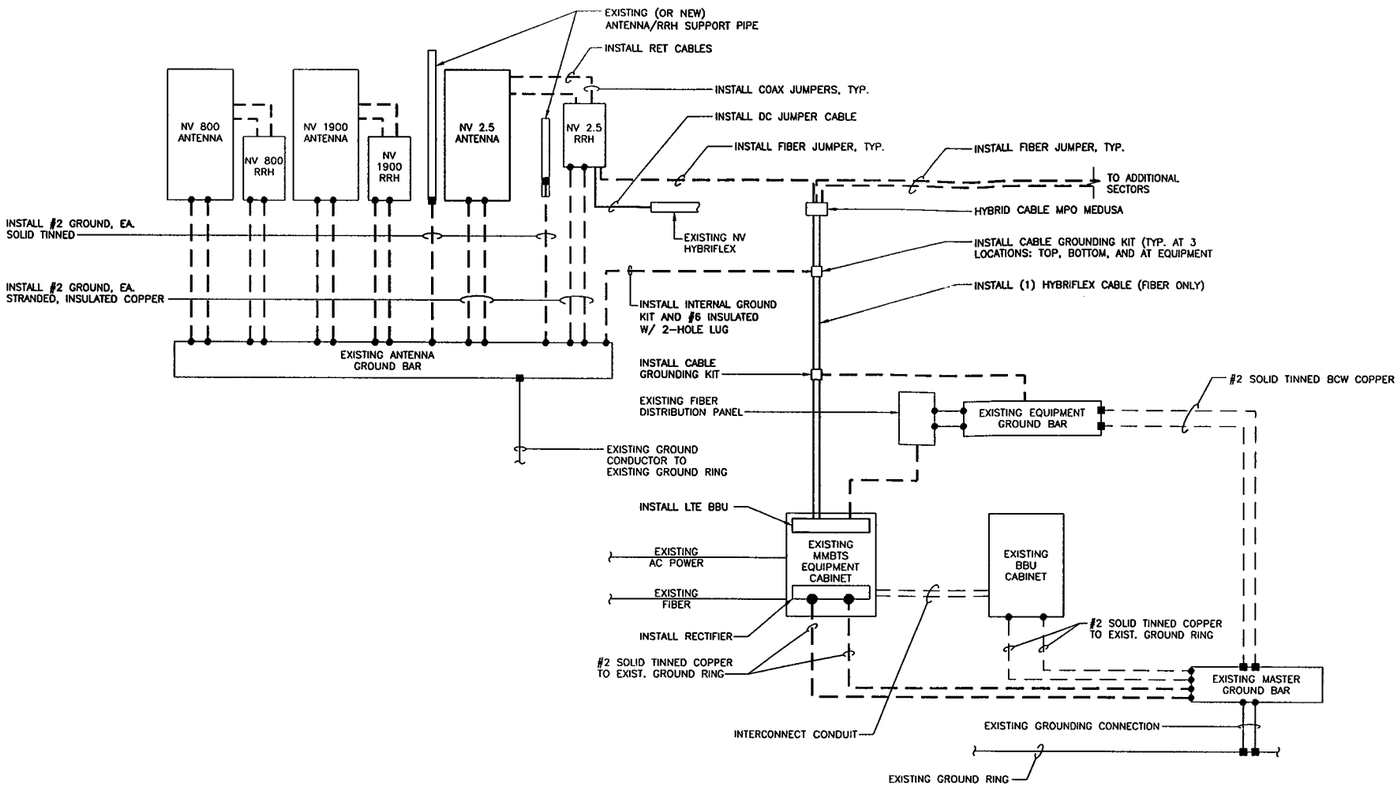
CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

DRAWING TITLE:

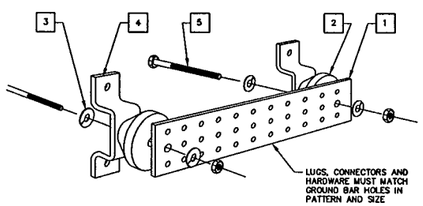
EQUIPMENT DETAILS

DRAWING SHEET: 8 OF 10

C-7



1 / E-1 TYPICAL POWER & GROUNDING ONE-LINE DIAGRAM
SCALE: N.T.S.

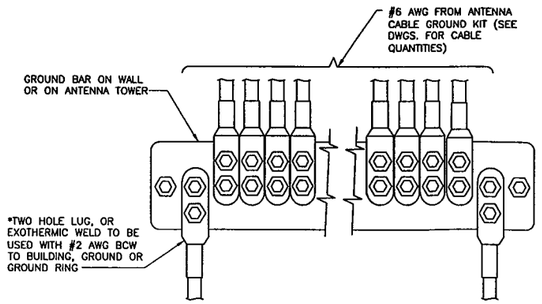


LEGEND

1. COPPER GROUND BAR, 7/16"X 4" X 20", NEWTON INSTRUMENT CO. CAT. NO. B-8142. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4.
3. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
5. 5/8-11 X 1" H.H.C.S.BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

GROUND BAR SCHEDULE				
TYPE	QTY.	MANUFACTURER	CAT. NO.	REMARKS
MGB	2	HARGER	GB14420TMGB	OR EQUAL
CGB	3	HARGER	GB14412TMGB	OR EQUAL

2 / E-1 TYPICAL GROUND BAR DETAIL
SCALE: NTS

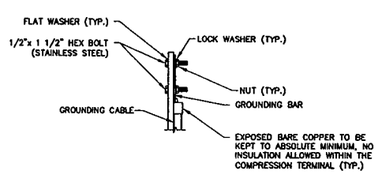


* - GROUND BARS AT THE BOTTOM OF TOWERS/MONOPOLES SHALL ONLY USE EXOTHERMIC WELDS.

- ATTACH "DO NOT DISCONNECT" LABELS TO GROUND BARS. CAN USE BRASS TAG "DO NOT DISCONNECT" AT EACH HYBRIFLEX GROUND POINT OR BACK-A-LITE PLATE LABEL ON GROUND BAR.

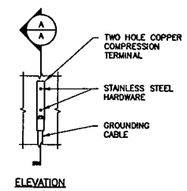
- CONNECT SEQUENCE- BOLT/WASHER/NO-OX/GROUND BAR/NO-OX/WASHER/LOCK-WASHER/NUT. THIS IS REPEATED FOR EACH LUG CONNECTION POINT.

3 / E-1 TYPICAL GROUND BAR CONNECTION PLAN
SCALE: NTS



SECTION "A-A"

NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.



ELEVATION

4 / E-1 TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: NTS

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
4. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
5. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THNN INSULATION.
6. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
7. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
8. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
9. GROUNDING SHALL COMPLY WITH NEC ART. 250.
10. GROUND HYBRIFLEX CABLE SHIELDS AT 3 LOCATIONS USING MANUFACTURER'S HYBRIFLEX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
11. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
12. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
13. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
14. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
15. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
16. BOND ANTENNA MOUNTING BRACKETS, HYBRIFLEX CABLE GROUND KITS, AND RRHs TO EGB PLACED NEAR THE ANTENNA LOCATION.
17. BOND ANTENNA EGB'S AND MGB TO GROUND RING.
18. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULT FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
19. CONTRACTOR SHALL CONDUCT ANTENNA, HYBRIFLEX CABLES, AND RRH RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
20. CONTRACTOR (CERTIFIED ELECTRICIAN) SHALL CHECK CAPACITY OF EXISTING SERVICE & PANEL ON SITE TO DETERMINE IF CAPACITY EXISTS TO ACCOMMODATE THE ADDED LOAD OF THIS PROJECT. ADVISE ENGINEER OF ANY DISCREPANCY.

COM-EX Consultants
115 Route 46
Suite E30
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE

INFORMATION ON THESE DRAWINGS IS NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY THE STAMPED SEAL & SIGNATURE OF A PROFESSIONAL ENGINEER

NICHOLAS B. BARILE
No. 23643
PROFESSIONAL ENGINEER, CT LIC. NO. 23643

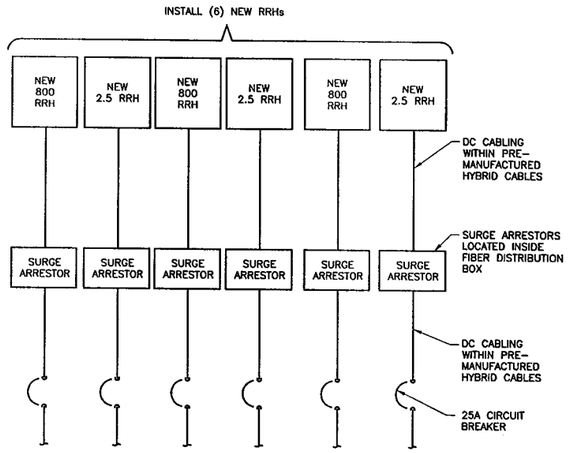
CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

DRAWING TITLE:

GROUNDING DETAILS

DRAWING SHEET: 9 OF 10

E-1



1 / E-2 DC ONE-LINE DIAGRAM
SCALE: NTS

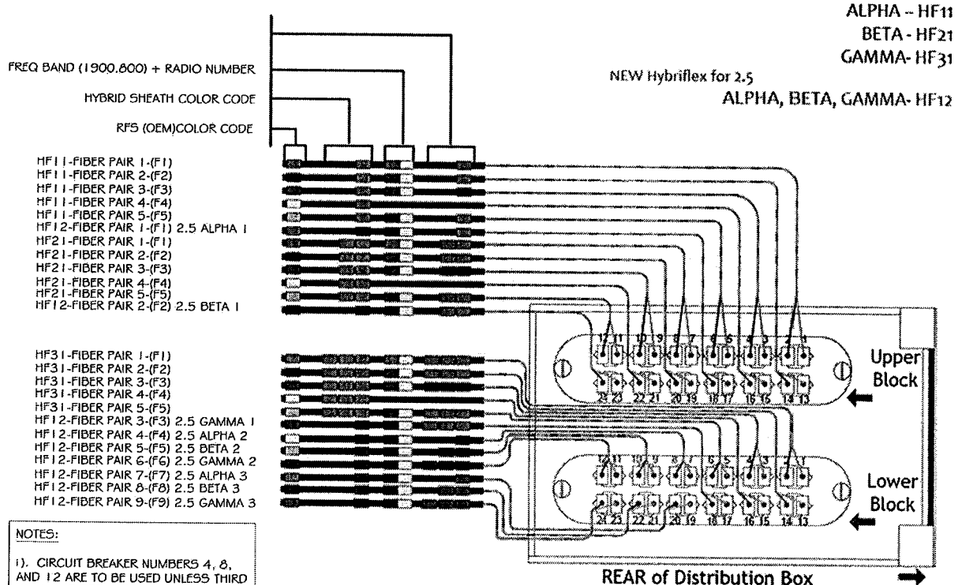
A/C PANEL SCHEDULE							
VOLTAGE:	240V/120		PANEL STATUS:	EXISTING		N TO GROUND BOND:	YES
MAIN BREAKER:	200 AMP		MODEL NUMBER:	TBD		INTERNAL TVSS:	YES
MOUNT:	AT GRADE		PHASE:	1		WIRE:	3
ENCLOSURE:	NEMA 3R		BUSS RATING:	200 AMP		GROUND BAR:	YES
			NEUTRAL BAR:	YES			

2 / E-2 AC PANEL SCHEDULE
SCALE: NTS

Each sector has separate Hybriflex cable.
Hybriflex cable naming as follows:

ALPHA - HF11
BETA - HF21
GAMMA- HF31

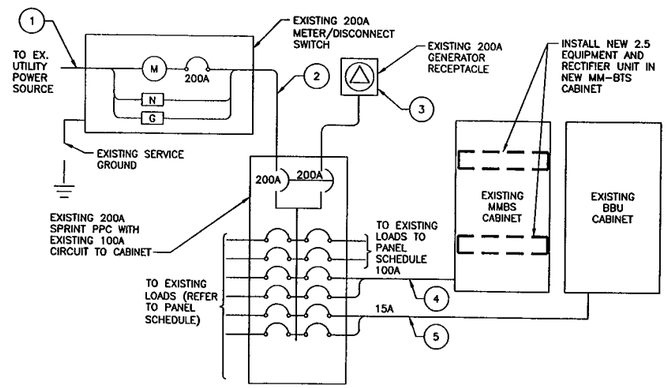
NEW Hybriflex for 2.5
ALPHA, BETA, GAMMA- HF12



NOTES:

1). CIRCUIT BREAKER NUMBERS 4, 8, AND 12 ARE TO BE USED UNLESS THIRD DC RAIL IS REQUIRED FOR MICROWAVE.
2). USE DC POWER LOOP.
3). ALL UNUSED DC FEEDERS TO BE TERMINATED WITH WIRE NUTS AND TAPED.
4). REMOVE ALL DEBRIS FROM INTERIOR OF FIBER DISTRIBUTION BOX WHEN COMPLETE.

3 / E-2 TYPICAL FIBER DISTRIBUTION
SCALE: NTS



CIRCUIT SCHEDULE			
NO.	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/ DISCONNECT	EXISTING
2	METER/ DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	EX. MMBS CABINET	(3) #2 AWG, (1) #8 GND IN 1-1/2" CONDUIT
5	TRANSFER & LOAD CENTER	EX. BBU CABINET	(2) #12 AWG, (1) #12 GND IN 3/4" CONDUIT

4 / E-2 ELECTRICAL ONE-LINE DIAGRAM
SCALE: NTS

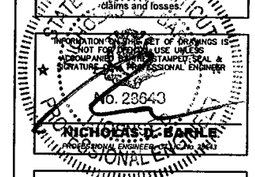
COM-EX Consultants
115 Route 46
Suite E39
Mountain Lakes, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

Sprint
6100 SPRINT PARKWAY
OVERLAND PARK, KS 66251

Cherundolo Consulting

SCHEDULE OF REVISIONS		
7		
6		
5		
4		
3		
2	12/14/17	ISSUED FOR CONSTRUCTION
1	09/22/17	REVISED PER RFDS
0	08/22/17	INITIAL SUBMISSION
REV. NO.	DATE	DESCRIPTION OF CHANGES

DRAWN BY:	NJM
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	17108-CHE



CT33XC025
39 LOWER ROAD
N. CANAAN, CT 06018

DRAWING TITLE:

DC POWER DETAILS & PANEL SCHEDULES

DRAWING SHEET: **10 OF 10**

E-2